Research Report 1301

SCALING ARMED SERVICES VOCATIONAL APTITUDE BATTERY (ASVAB) FORM 8AX

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PERSONNEL UTILIZATION TECHNICAL AREA

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New forms of the Armed Services Vocational Aptitude Battery (ASVAB) were implemented for operational use on 1 October 1980. This report covers the calibration of the new forms based on a sample of applicants for enlistment and on a combined sample of applicants and recruits. Independent scaling efforts were conducted on samples of enlistees and of high school students. The three calibration efforts were in close agreement in the critical score region (10th through 30th percentile scores). The results indicate that the score scale for

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Item 20 (continued)

ASVAB 8/9/10 accurately tracks to the Department of Defense traditional reference population.

Research Report 1301

SCALING ARMED SERVICES VOCATIONAL APTITUDE BATTERY (ASVAB) FORM 8AX

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FOREWORD

The accuracy of the ASVAB score scale is critical because of the widespread use of the scores throughout the Department of Defense. ASVAB scores are used for setting enlistment standards, reporting the quality of enlisted accessions, and historical tracking of the quality of accessions back to 1950, when the score scale was first developed. The ASVAB was introduced for interservice use to test applicants for enlistment in 1976. The score scale for that version of the ASVAB was found to be in serious error, with the consequent misstatements about the quality of enlisted accessions during the period 1976 until October 1980.

With the implementation of new forms of the ASVAB on 1 October 1980, the score scale has been corrected, and the original meaning of the ASVAB scores has been restored.

This research was done by the Personnel Utilization Technical Area in response to requirements of Army Project 2Q763731A791 and to special requirements of the Assistant Secretary of Defense for Manpower, Reserve Affairs, and Logistics.

JOSEPH ZEIDNER
Technical Director

SCALING ARMED SERVICES VOCATIONAL APTITUDE BATTERY (ASVAB) FORM 8AX

BRIEF

Requirements:

To calibrate new forms of the Armed Services Vocational Aptitude Battery (ASVAB), using the traditional Department of Defense reference population as the basis for developing the ASVAB score scale.

Procedure:

The new ASVAB (form 8AX) was administered to a sample of applicants for enlistment in January-February 1980 at Armed Forces Examining and Entrance Stations (AFEES) selected to be geographically representative. The Armed Forces Qualification Test (AFQT) form 7A was also administered in counterbalanced order for use as the reference test. The equipercentile equating technique, with smoothing of the score distributions, was used to calibrate ASVAB-8AX.

Findings:

The data were edited to remove examinees with deviant test scores and the calibration completed on the cleaned-up sample (N=2375). Independent calibrations of ASVAB 8AX were completed for samples of service recruits and high school students in grades 11 and 12. The results of the three calibration efforts were similar, especially in the bottom third of the score range, which is where the services make most of their selection decisions. The final conversion from ASVAB raw scores (number of items correct) to standard and percentile scores was based on the combined sample of applicants and recruits (N=5375).

Utilization:

The new forms of the ASVAB, with the score scale based on traditional reference population, were implemented for operational use on 1 October 80. The new tests are used to help determine qualification for enlistment and eligibility for assignment to skill specialty training as well as for retesting of in-service personnel.

SCALING ARMED SERVICES VOCATIONAL APTITUDE BATTERY (ASVAB) FORM 8AX

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SCALING ARMED SERVICES VOCATIONAL APTITUDE BATTERY (ASVAB) FORM 8AX

INTRODUCTION

The Armed Services Vocational Aptitude Battery (ASVAB) is used by all military services to help determine mental qualification for enlistment. The ASVAB provides an Armed Forces Qualification Test (AFQT) score and aptitude composite scores. The AFQT, a measure of general trainability, serves a dual purpose: one use is as a preliminary screen for enlistment and the second is for reporting the quality of accessions, with historical comparisons dating back to World War II.

The score scale for the ASVAB is referenced to the World War II mobilization population. Since WWII the various forms of the AFQT and the ASVAB have been calibrated to that population. The use of a constant reference population permits the military services to maintain standards for enlistment and assignment to job specialties, even though both test forms and overall quality of accessions have been changed from time to time.

The first inter-service version of the ASVAB (forms 6 and 7) was implemented on 1 January 1976 for selecting and classifying applicants for enlistment. These scores, as for predecessor tests, were to be referenced or calibrated to the traditional reference population. Within a few months of implementation, however, the scaling of the AFQT score was found to be in error at the upper end of the score range. A correction was applied to the table for converting AFQT raw scores to percentile scores, which reduced the percentage of accessions in the upper half of the score range. After some time it became apparent that the bottom half of the score range was also in error. The extent of this scaling error, which resulted in higher percentile scores than warranted as compared to the reference population, was documented in spring 1980.[1]

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[1]The reports that confirmed the ASVAB 6/7 scaling problem are:

A) Sims, W. H. and Truss, A. R. A Reexamination of the Normalization of the Armed Services Vocational Aptitude Battery (ASVAB) Forms 6, 7, 6E and 7E. CNS 1152. Alexandria, VA., Center for Naval Analyses, April 1980.

B) Maier, M. H. and Grafton, F. C. Renorming ASVAB 6/7 at Armed Forces Examining and Entrance Stations. Technical Memorandum 80-1. Washington, D.C.: Directorate for Accession Policy, Office of the Secretary of Defense, August 1980.

C) Boldt, R. F. Scaling of the Armed Services Vocational Aptitude Battery Form 7, and General Classification Test Form 1C to the Armed Forces Qualification Test Scale. Technical Memorandum 80-2. Washington, D.C.: Directorate for Accession Policy, Office of the Secretary of Defense, August 1980.

The manpower implications of an incorrect scaling of ASVAB can be serious. For example, the services constrain the number of marginal persons (below average scores on the AFQT, labeled as AFQT category IV). Based on the incorrectly scaled AFQT scores, the Department of Defense reported that only about six percent of all accessions were in AFQT category IV. When the ASVAB was correctly scaled to the reference population, however, the percentage was about 30 percent, or five times as high.

New forms of the ASVAB have been prepared for operational use. Personnel management throughout the Department of Defense was concerned that the score scale for the new forms be properly calibrated to the reference population, which would maintain the traditional meaning of the scores for selection and classification purposes. Whereas normally only one research effort would be undertaken to calibrate a new test version, three independent efforts were conducted for the new forms of the ASVAB. These three efforts were based on three different samples: (a) applicants for enlistment, tested at Armed Forces Examining and Entrance Stations (AFEES); (b) new recruits who had just entered the Armed Services, tested at reception centers; and (c) high school students in grades 11 and 12, tested in geographically dispersed schools. The results based on applicants for enlistment and the combined sample of applicants and recruits are described in this report. The other efforts are described in other reports.[2]

PROCEDURES

Sample. A sample of AFEES, where applicants are processed prior to enlistment, was selected to be geographically representative of the United States. The list of AFEES and the number of applicants desired from each are shown in Table 1. Also shown are the number tested and the number in the final sample from each AFEES. Applicants may be tested at the AFEES itself or at mobile testing sites. The latter are staffed by military testing personnel or by civilians from the Office of Personnel Management. Applicants processed at sites staffed by the Office of Personnel Management were not included in the sample because of contractual restrictions; the contract does not cover the cost of administering extra experimental tests as is required for efforts of this type. The sample size was 2620 male applicants for all services tested during January and February 1980.

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A) Sims, W. H. and Truss, A. R. Normalization of the Armed Services Vocational Aptitude Battery (ASVAB) Forms 8, 9, and 10 using a sample of Service Recruits. CRC 438. Alexandria, VA: Center for Naval Analyses, December 1980.

B) Boldt, R. F. Scaling of the AFQT composite of the Armed Services Vocational Aptitude Battery Form 8 in a High School Population. Technical Memorandum 80-3. Washington, DC: Directorate for Accession Policy, Office of the Secretary of Defense, September 1980.

Table 1

SAMPLE OF AFEES FOR CALIBRATING ASVAB-8AX

AFEES	Male Quota	Number Tested	Number in Final Sample
Fort Hamilton	350	339	312
Fort Jackson	200	205	187
Miami	300	334	292
Springfield, MA	125	125	114
New Haven	150	150	142
New Orleans	200	226	201
Kansas City	100	0	0
Indianapolis	150	185	157
Omaha	125	123	118
Houston	225	94	87
Seattle	75	78	72
Los Angeles	500	635	577
Phoenix	100	99	90
AFEES unidentified		27	26
TOTAL	2600	2620	2375

Prior to administratrion of the experimental tests, each AFEES was visited by a representative from one of the service research laboratories or from the Military Enlistment Processing Command, which has the responsibility for the AFEES and all enlistment processing. They briefed AFEES personnel on the importance of the data collection and monitored at least one administration of the experimental tests. All monitors submitted a report on the visit, and the reports uniformly stated that test sessions monitored by them conformed to good testing practices.

Variables. All applicants in the sample were administered AFQT-7A (used from 1960 until 1973 as the first screen for inductees and enlistees) as the reference (or old) test, and a new form of the ASVAB, called form 8AX. The subtests in ASVAB-8AX are described in Table 2. ASVAB-8AX requires about three hours to administer, and AFQT-7A requires approximately one hour. These two tests were administered in counterbalanced order. On the following day, the applicants were administered the operational ASVAB (form 6 or 7) to determine if they met the standards for enlistment. A Privacy Act statement was read to applicants prior to administration of the experimental tests.

ASVAB-8AX is one form of the new version. Six forms of the AFQT subtests (Word Knowledge, Arithmetic Reasoning, Paragraph Comprehension, and Numerical Operations) and three forms of the remaining subtests have been developed. The counterpart subtests in each form are intended to be parallel. The parallelism of the versions, along with the accuracy of the score scale, will be verified on the samples of applicants coincident with operational implementation of ASVAB 8/9/10.

Statistical Analysis. Prior to computation of the scaling of ASVAB-8AX, the data were edited to identify scores that were suspected of being in error because of faulty test administration or different levels of motivation for the various tests. Scores on speeded tests are especially prone to be in error because of mistiming, which would distort the conversion of the ASVAB scores. Individuals with subtest scores that deviated significantly from expected values were deleted from the sample.

The technique used for calibrating ASVAB-8AX to AFQT-7A scores is called equipercentile equating, which consists of comparing the cumulative frequency distribution of the new test to that of the old, and converting raw scores (number of items correct) on the new test to equivalent scores on the old or reference test.

RESULTS

The distribution of reference test scores for the applicant sample is shown in Table 3, along with distributions of two earlier applicant samples. Since the samples of applicants shown in Table 3 were similar to each other, the scaling of the new ASVAB should generalize to applicants of this era.

Table 2

SUBTESTS IN ASVAB 8/9/10

Subtest	No. of Items	Time Limit	Description
General Science	25	11	Knowledge of physical and biological sciences.
Arithmetic Reasoning	30	36	Word problems that emphasize reasoning rather than mathematical skill.
Word Knowledge	35	11	Understanding the meaning of words.
Paragraph Comprehension	15	13	Understanding the meaning of paragraphs.
Numerical Operations	50	3	A speeded test of the four arithmetic operations--addition, subtraction, division, and multiplication.
Coding Speed	84	7	A speeded test to match words and numbers.
Auto/Shop Information	25	11	Knowledge of automobiles, shop procedures and tools.
Mathematics Knowledge	25	24	Knowledge and skills in algebra, geometry, and fractions.
Mechanical Comprehension	25	19	Understanding of mechanical principles, such as gears, levers, pulleys, and hydraulics.
Electronics Information	20	9	Knowledge of electricity, radio principles and electronics.

Prior to developing the conversion tables for converting raw scores to scaled scores, the data were edited to identify cases where scores were suspect. The original sample size prior to editing was 2620 male applicants. Cases were considered deviant if the predicted AFQT or Numerical Operations score differed by more than 2 standard errors of estimate from the observed score. After deleting the deviant cases the sample size was reduced to 2375. The statistics used to identify deviant cases are shown in Table 4.

Calibration of AFQT-8AX. The conversion from AFQT-8AX raw score to scaled score was computed (a) for the full sample, (b) after deleting cases based on deviant AFQT-8AX raw scores, and (c) after deleting additional cases with deviant Numerical Operations scores. The conversions were computed only for the AFQT score (AFQT is composed of the Arithmetic Reasoning, Word Knowledge, Paragraph Comprehension, and Numerical Operations subtests). The three conversions are shown in Table 5.

The results shown in Table 5 are highly similar, which suggests that deleting deviant cases had little effect on the scaled scores. Because the sample with deviant cases removed is expected to contain fewer errors, the conversions in this effort were based on this sample. Unless otherwise specified, all subsequent results for the applicant sample in this report are based on this "cleaned up" sample of 2375 cases.

The cumulative frequency distributions for the reference test, AFQT-7A, and AFQT-8AX are shown in Figure 1. The actual frequencies are plotted, along with the smoothed lines that removed minor fluctuations in the sample. Percentile scores for AFQT-8AX were obtained by reading the AFQT-7A percentile scores that had the same cumulative frequency as AFQT-8AX raw scores. These are the values shown in the final column of Table 5. The number of cases at the top of the AFQT-7A score scale was too small to obtain a reliable calibration of AFQT-8AX above a percentile score of 95. The percentile scores shown in Table 5 therefore are truncated at the 95th percentile score.

Two additional independent calibrations of AFQT-8AX were computed; one was on a sample of service recruits and the second on a sample of high school students. The results for service recruits are presented by Sims and Truss and those for high school students by Boldt.[3] The calibrations for the three samples (applicants, recruits, and high school students) are shown in Figure 2. The conversion from raw score to percentile score is similar in the bottom of the score range for all three samples. Above a percentile score of about 20, the conversion for high school students becomes more difficult; that is, a given raw score converts to a lower percentile score than in the other two samples. The conversions for applicants and recruits remains similar throughout the score range, except at the top of the score range where no conversion could be computed for the sample of applicants.

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a. Sims & Truss, Ibid

b. Boldt, Ibid

Table 3

DISTRIBUTIONS OF AFQT-7A SCORES AT AFEES

AFQT-7A Decile	SAMPLE June 1979	July 1979	Jan-Feb 1980
1-10	11.5%	11.1%	11.2%
11-20	24.6	23.7	24.4
21-30	13.2	14.5	13.9
31-40	11.3	11.4	10.9
41-50	8.3	8.4	8.4
51-60	8.7	9.0	9.6
61-70	7.4	6.8	7.3
71-80	5.9	6.1	6.1
81-90	6.8	6.8	6.3
91-99	2.1	2.2	1.9
TOTAL NUMBER	5069	5521	2375

Table 4

REGRESSION STATISTICS USED TO IDENTIFY DEVIANT TEST SCORES

A. Predict AFQT-8AX from AFQT-7A

Test	Mean	Std. Dev.	Correlation	Std. Error of Estimate	N
8AX	61.4	21.45			
			.789	13.17	2620
7A	49.3	21.74			

B. Predict Numerical Operations (NO) from Arithmetic Reasoning (AR)

NO	32.2	11.29			
			.555	9.40	2481
AR	14.7	6.60			

Table 5

CALIBRATIONS OF AFQT-8AX IN EDITED SAMPLES OF APPLICANTS

AFQT 8AX Raw Score	Percentile Score Sample[a] A	B	C	Raw Score	Percentile Score Sample A	B	C	Raw Score	Percentile Score Sample A	B	C	Raw Score	Percentile Score Sample A	B	C
0-18	1	1	1	40	13	13	12	62	29	29	28	84	63	63	65
19	2	2	1	41	14	14	12	63	30	30	30	85	64	64	66
20	3	3	1	42	14	14	13	64	31	31	31	86	66	67	69
21	3	3	1	43	15	14	13	65	32	32	32	87	69	70	71
22	3	4	1	44	15	15	14	66	34	33	33	88	72	72	73
23	4	4	1	45	16	16	14	67	36	34	35	89	74	73	75
24	4	5	2	46	16	16	15	68	38	37	36	90	76	75	77
25	5	5	3	47	17	17	15	69	40	38	37	91	78	78	79
26	6	5	4	48	17	17	16	70	42	40	41	92	80	80	80
27	7	6	5	49	18	17	16	71	44	43	42	93	81	81	81
28	7	7	5	50	18	18	17	72	46	46	44	94	82	82	83
29	8	8	6	51	19	18	17	73	48	48	46	95	83	85	85
30	8	8	6	52	19	19	18	74	49	49	48	96	85	87	87
31	9	9	7	53	20	20	19	75	50	50	50	97	87	89	89
32	9	9	7	54	21	21	20	76	51	51	51	98	89	89	91
33	10	10	8	55	22	22	21	77	53	52	53	99	91	91	93
34	10	10	9	56	23	23	22	78	54	54	54	100	92	92	94
35	11	11	9	57	24	24	23	79	56	56	56	101	93	93	95
36	11	11	10	58	25	25	24	80	58	58	57	102	94	95	95
37	12	12	10	59	26	26	25	81	60	60	59	103-105[b]			
38	12	12	11	60	27	27	26	82	61	62	61				
39	13	13	11	61	28	28	27	83	62	62	63				

NOTE:

[a] Sample A contains all cases, N=2620.
Sample B has persons with deviant AFQT scores removed N=2481.
Sample C has persons with deviant AFQT and NO scores removed N=2375.

[b] Due to lack of cases no conversion for these raw scores was computed.

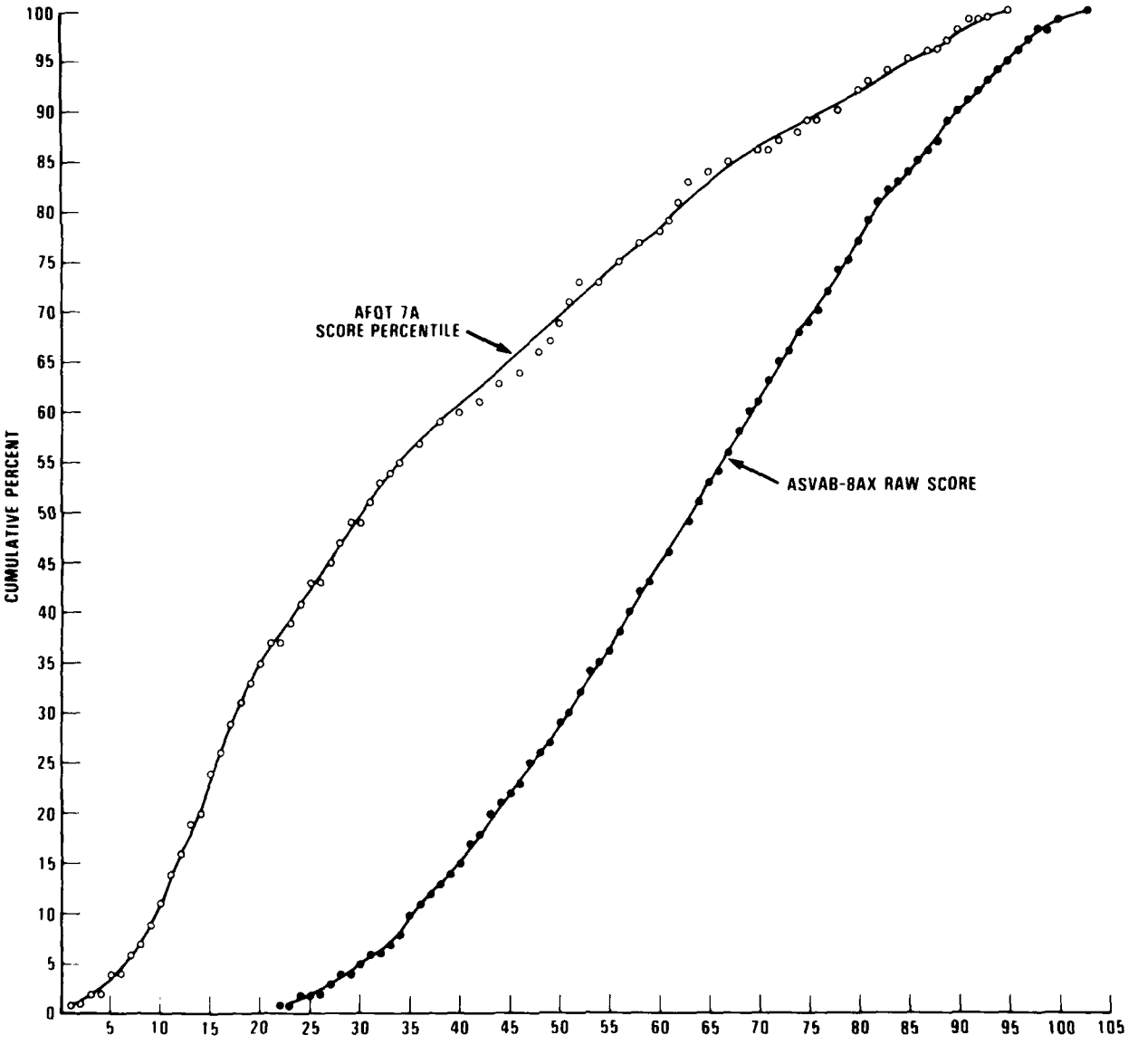

Figure 1. Cumulative frequency distribution of AFQT-7A and AFQT-8AX scores in applicant sample

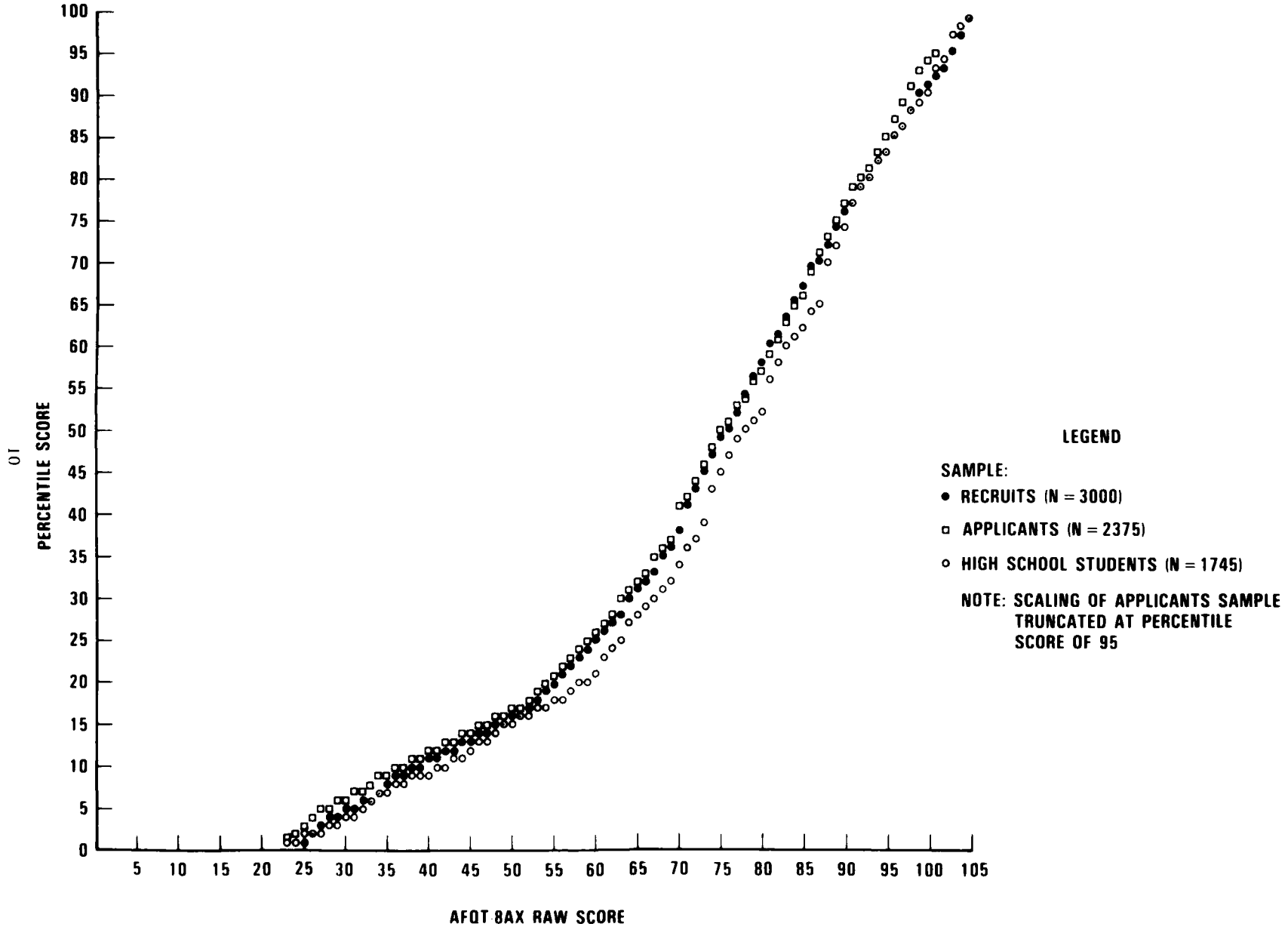

Figure 2. Calibration of AFQT-8AX in three independent samples

Final Scaling of AFQT-8AX. The final scaling of AFQT-8AX was based on the combined sample of applicants and recruits. Cases with deviant scores on AFQT-8AX or Numerical Operations had also been removed from the recruit sample and the final combined sample consisted of 5375 cases. The combined sample had an adequate number of cases to permit reliable conversions throughout the score range. The distributions of AFQT-7A reference test scores for the separate and combined samples are shown in Table 6. The cumulative frequency distribution of the AFQT-7A and AFQT-8AX scores for the combined sample are shown in Figure 3. Employing the usual equipercentile technique, AFQT-8AX raw scores were scaled to the traditional reference population. The final conversion of AFQT-8AX raw score to percentile score is shown in Table 7 and Figure 4. This conversion based on the combined sample is used operationally for obtaining AFQT scores from ASVAB 8/9/10.

Subtest Standard Scores. A new feature of ASVAB 8/9/10 is that subtest raw scores are converted to standard scores prior to computing aptitude composite scores. In earlier versions of ASVAB, subtest raw scores (number of items correct) were summed and converted to aptitude composite scale scores (standard scores for Army and Marine Corps and percentile scores for Air Force). The use of subtest raw scores meant that the entire battery had to be replaced or rescaled at the same time; however, by converting subtest raw scores to standard scores prior to computing composite scores, individual subtests can be replaced one at a time, and the computation of composite scaled scores is not affected. New versions of subtests, therefore, can readily be introduced without going through the arduous process of rescaling the entire test battery.

All subtest raw scores were scaled using a linear transformation to have a mean of 50 and standard deviation 10 in the reference population. The procedures for computing subtest standard scores were as follows: (a) The AFQT-7A scores in the combined sample of applicants and recruits were weighted to reproduce the distribution of AFQT scores in the reference population. The weights for the combined sample are shown in Table 8. As is typical of applicants and recruits in this era, the sample is overrepresented in the lower deciles, and underrepresented in the upper deciles, as compared to the reference population. Correspondingly, the weights in the bottom half are less than unity, while those in the upper half are greater than unity. (b) Subtest means and standard deviations were computed on the sample. Subtest means and standard deviations in the weighted sample are shown in Table 8. Subtest intercorrelations are shown in Appendix A. (c) The conversion from the subtest raw scores to standard scores were computed using the conventional formula:

$$StdSc = 50 + 10\ (X-\bar{X})/S_x,$$

where --

StdSc is the subtest standard score ranging from 20 through 80.
10 is the standard deviation of the standard scores for each subtest.
50 is the mean standard score for each subtest.
X is the subtest raw score.

$\bar{X}$ is the subtest mean raw score in the weighted sample.
S_x is the subtest raw score standard deviation in the weighted sample.

Table 6

DISTRIBUTION OF AFQT-7A SCORES IN EDITED SAMPLES

AFQT-7A Decile	SAMPLE					
	Recruits		Applicants		Combined	
	Freq	%	Freq	%	Freq	%
1-10	94	3.1	266	11.2	360	6.7
11-20	486	16.2	579	24.4	1065	19.8
21-30	420	14.0	330	13.9	750	14.0
31-40	425	14.2	260	10.9	685	12.7
41-50	302	10.1	201	8.4	503	9.4
51-60	356	11.9	227	9.6	583	10.8
61-70	301	10.0	174	7.3	475	8.8
71-80	252	8.4	144	6.1	396	7.4
81-90	274	9.1	150	6.3	424	7.9
91-99	90	3.0	44	1.9	134	2.5
TOTAL NUMBER	3000		2375		5375	

Table 7

FINAL CALIBRATION OF AFQT-8AX IN COMBINED SAMPLE OF RECRUITS AND APPLICANTS

Raw Score	Percentile Score	Raw Score	Percentile Score	Raw Score	Percentile Score
0-21	1	61	26	101	93
22	1	62	28	102	95
23	2	63	29	103	97
24	3	64	30	104	98
25	3	65	31	105	99
26	4	66	33		
27	4	67	34		
28	5	68	36		
29	5	69	38		
30	6	70	40		
31	6	71	42		
32	7	72	44		
33	7	73	46		
34	8	74	48		
35	8	75	49		
36	9	76	50		
37	9	77	52		
38	10	78	54		
39	10	79	56		
40	11	80	58		
41	12	81	59		
42	12	82	61		
43	13	83	63		
44	13	84	65		
45	14	85	66		
46	14	86	68		
47	15	87	70		
48	15	88	72		
49	16	89	74		
50	16	90	76		
51	17	91	78		
52	18	92	80		
53	19	93	82		
54	20	94	83		
55	20	95	85		
56	21	96	86		
57	22	97	87		
58	23	98	88		
59	24	99	90		
60	25	100	91		

Table 8

STATISTICS FOR COMPUTING SUBTEST STANDARD SCORES

A. ASVAB Subtest Statistics

ASVAB Subtest	Mean	Standard Deviation	No. of Items
General Science	16.2	5.09	25
Arithmetic Reasoning	17.8	7.20	30
Word Knowledge	25.7	7.66	35
Paragraph Comprehension	10.5	3.44	15
Numerical Operations	36.0	10.39	50
Coding Speed	43.1	16.12	84
Auto/Shop Information	16.4	5.60	25
Mathematics Knowledge	12.5	5.95	25
Mechanical Comprehension	15.5	5.57	25
Electronics Information	12.5	4.32	20
Verbal	36.2	10.61	50

B. AFQT-7A (Reference Test) Score Distribution

Decile	Frequency	Weight[a]
1-10	360	1.49
11-20	1065	0.50
21-30	750	0.72
31-40	685	0.78
41-50	503	1.07
51-60	583	0.92
61-70	475	1.13
71-80	396	1.36
81-90	424	1.27
91-99	134	4.01
TOTAL NUMBER	N=5375	

[a] Weight applied to obtain uniform distribution of AFQT-7A scores

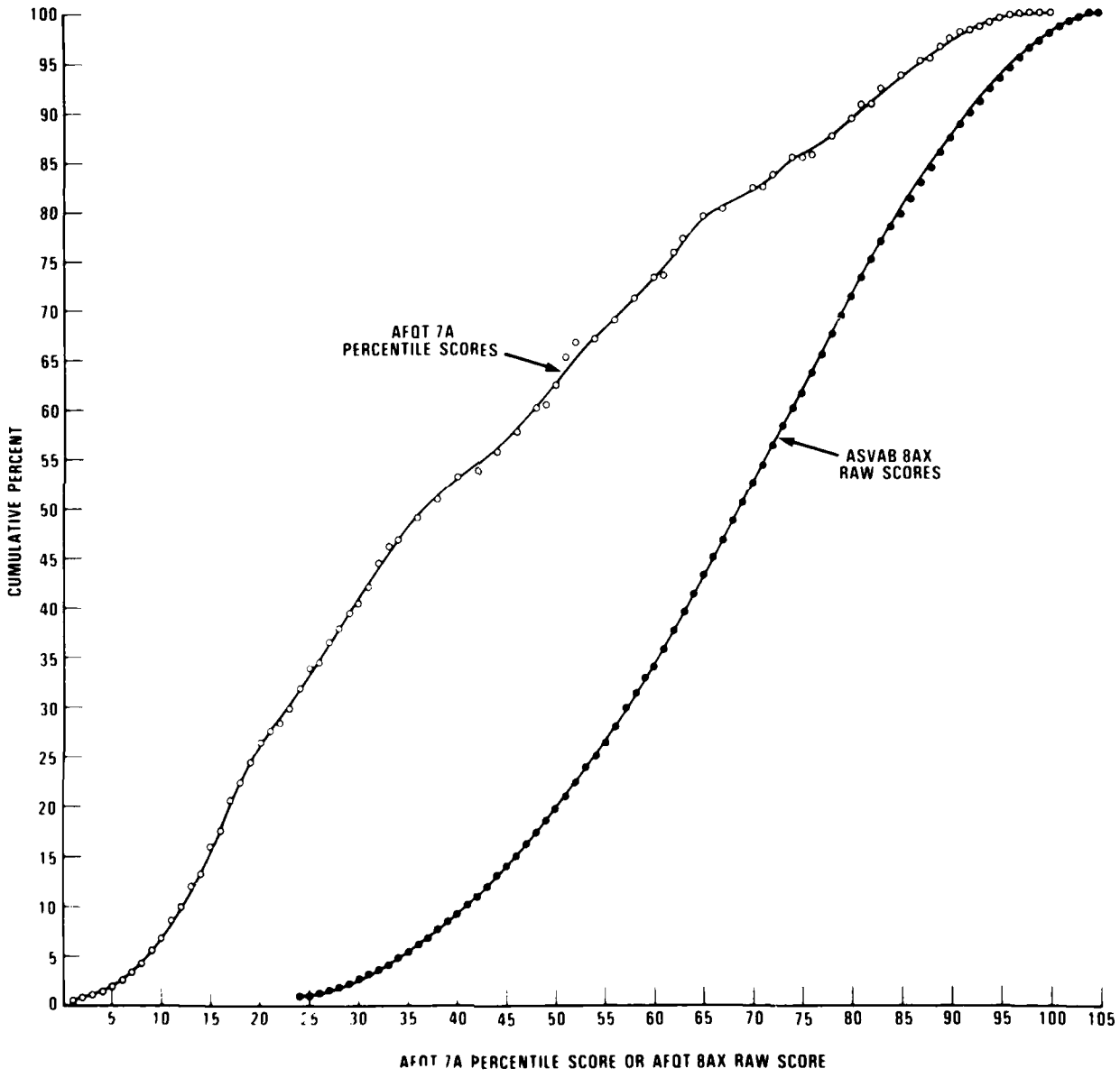

Figure 3. Cumulative frequency distribution of AFQT 7A and AFQT-8AX scores in combined sample of recruits and applicants

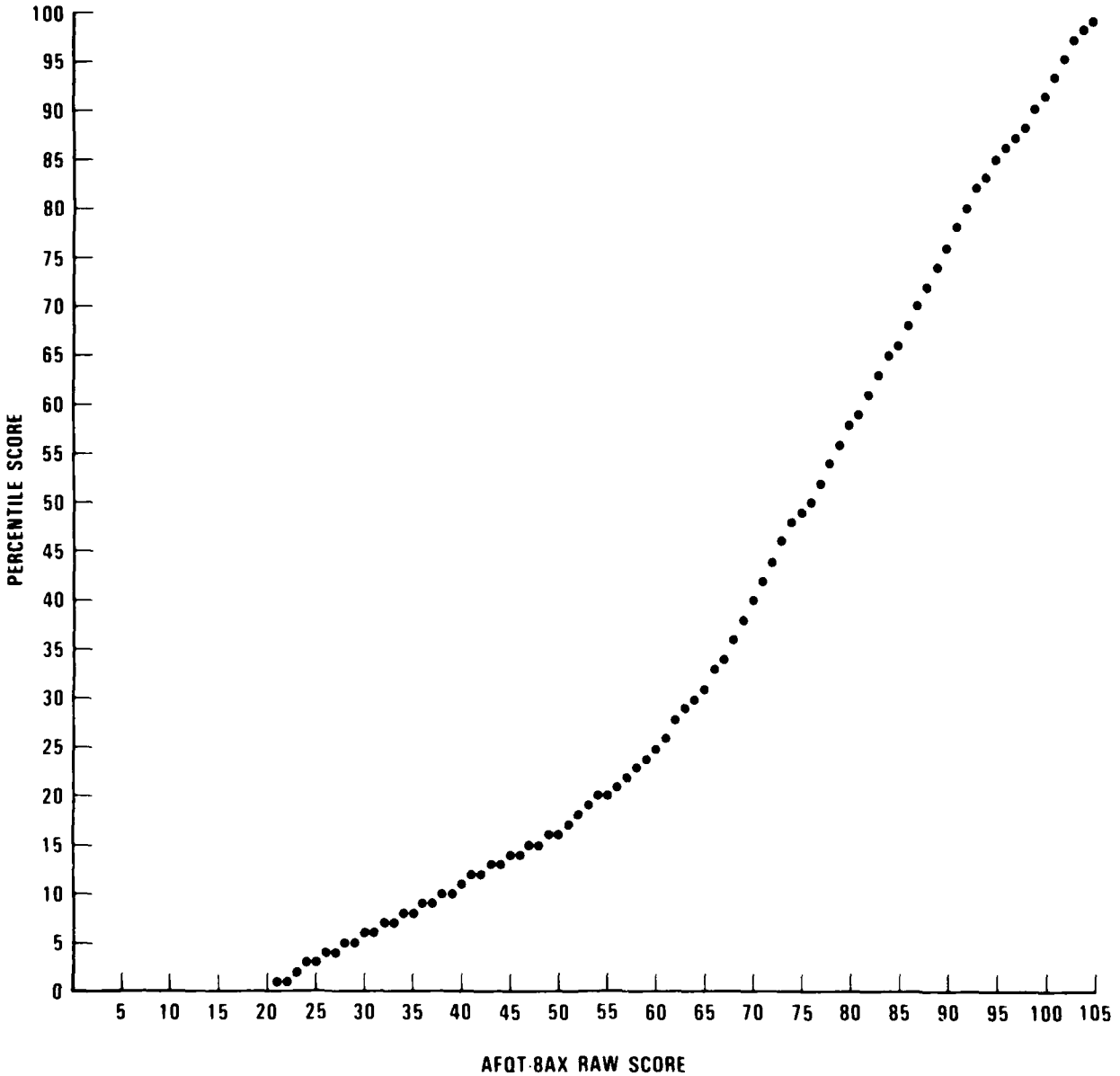

Figure 4. Final calibration of AFQT-8AX based on combined sample of recruits and applicants (N = 5375)

The conversion from raw score to subtest standard score is shown in Figure 5 for the Arithmetic Reasoning (AR) subtest in the separate samples of recruits and applicants and in the combined sample. The three conversions are almost identical. A separate conversion was computed for each subtest in the samples of recruits and applicants and in the combined Sample. As for Arithmetic Reasoning (AR) the conversions in the three samples are highly similar. The conversion tables for all subtest are shown in Appendix B.

Aptitude Composite Scores. Each service has developed its own set of aptitude composites to classify enlistees to job training programs. The services also use composites to supplement the AFQT for determining qualification for enlistment. The aptitude composites used by each service are shown in Table 9. Note that three composites contain identical subtests for all services: Electronics Repair (EL), Clerical/Administration (CL or A), and General or General Technical (G or GT). The services have moved in the direction of using the same subtests for classifying enlistees to similar jobs.

Aptitude composite scores are computed by summing the subtest standard scores. The Navy uses these sums directly for classifying enlistees, while the other services convert the sums to their traditional score scales. The Army and Marine Corps use a standard score scale with mean 100 and standard deviation 20. The Air Force uses a percentile score scale, the same as AFQT, except that the percentile scores are reported only in intervals of five units each. The score scales for aptitude composites, as for the AFQT, have been referenced to the traditional World War II mobilization population.

The procedures for computing the conversion from the sum of subtest standard scores to composite scores were as follows; (a) compute the cumulative frequency distribution of the sum of subtest standard scores for each composite; (b) convert the composite scores to percentile scores using the equipercentile equating technique and AFQT-7A as the reference test (analogous to scaling AFQT); (c) for the Army and Marine Corps transform the percentile scores to standard scores with mean 100 and standard deviation 20; for the Air Force the percentile scores are used directly with no further transformation. The equipercentile equating technique puts all composites on the same score scale as the reference population. The score scale for all composites are said to be "comparable" in that they are referenced to the same population. The conversion of the General (G or GT) composite score is shown in Figure 6 for the samples recruits and applicants and for the combined sample. The complete set of conversion tables from the sum of subtest standard scores to composite scores is at Appendix C. In each table of Appendix C, the first column shows the conversion for recruits, the second for applicants, and the third for the combined sample. The conversion for the combined sample has been adopted for operational use.

DISCUSSION AND CONCLUSIONS

Representativeness of the sample. Issues pertaining to the maintenance of the ASVAB score scale with historical continuity are becoming more severe. One issue--that of a representative sample for constructing a score scale--was faced explicitly in this effort. Even though a sample of applicants is the

Table 9

APTITUDE COMPOSITES FOR EACH SERVICE

Composite	Army	Navy	Air Force	Marine Corps
	Subtest			
Combat (CO)	CS+AR+MC+AS			NO+VE+AS
Field Artillery (FA)	CS+AR+MK+MC			AR+VE+AS
Electronics (E or EL)	AR+MK+EI+GS	AR+MK+EI+GS	AR+MK+EI+GS	AR+MK+EI+GS
Operator/Food (OF)	NO+VE+MC+AS			
Surveillance/ Communications (SC)	NO+CS+VE+AS			
Mechanical Maintenance (MM)	NO+EI+MC+AS			AR+EI+MC+AS
Maintenance (M)		VE+MC+AS	MC+GS+2AS	
General Maintenance (GM)	MK+EI+GS+AS			MK+EI+AS+GS
Clerical (CL)/ Administration (A)	NO+CS+VE	NO+CS+VE	NO+CS+VE	NO+CS+VE
Skilled Technical (ST)	VE+MK+MC+GS			
General Technical (GT)/ General (G)	VE+AR	VE+AR	VE+AR	VE+AR

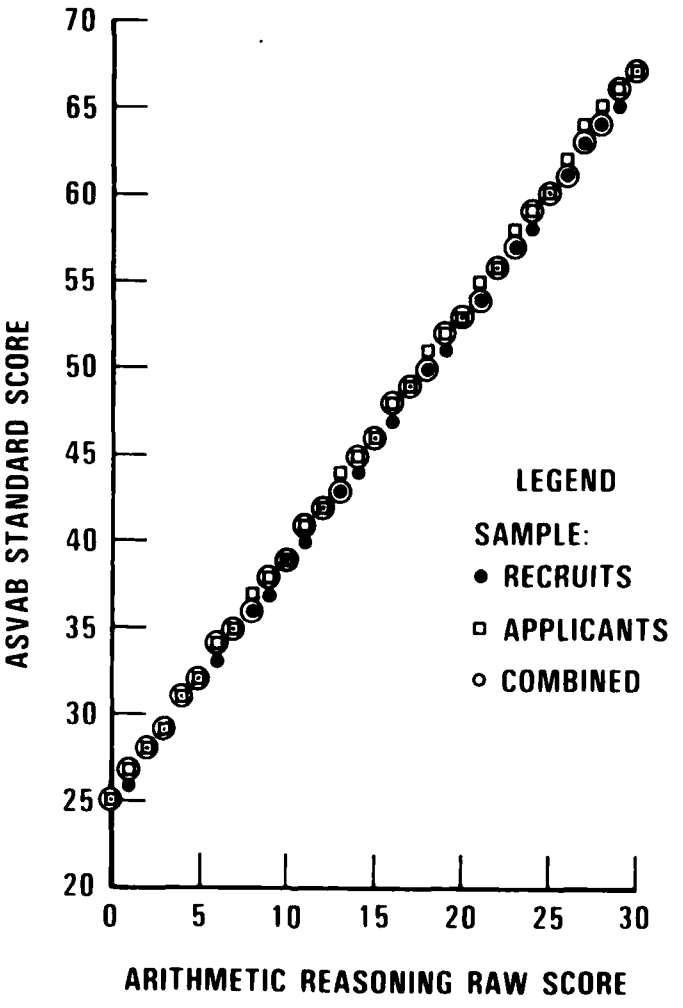

Figure 5. Converting Arithmetic Reasoning (AR) raw scores to subtest standard scores.

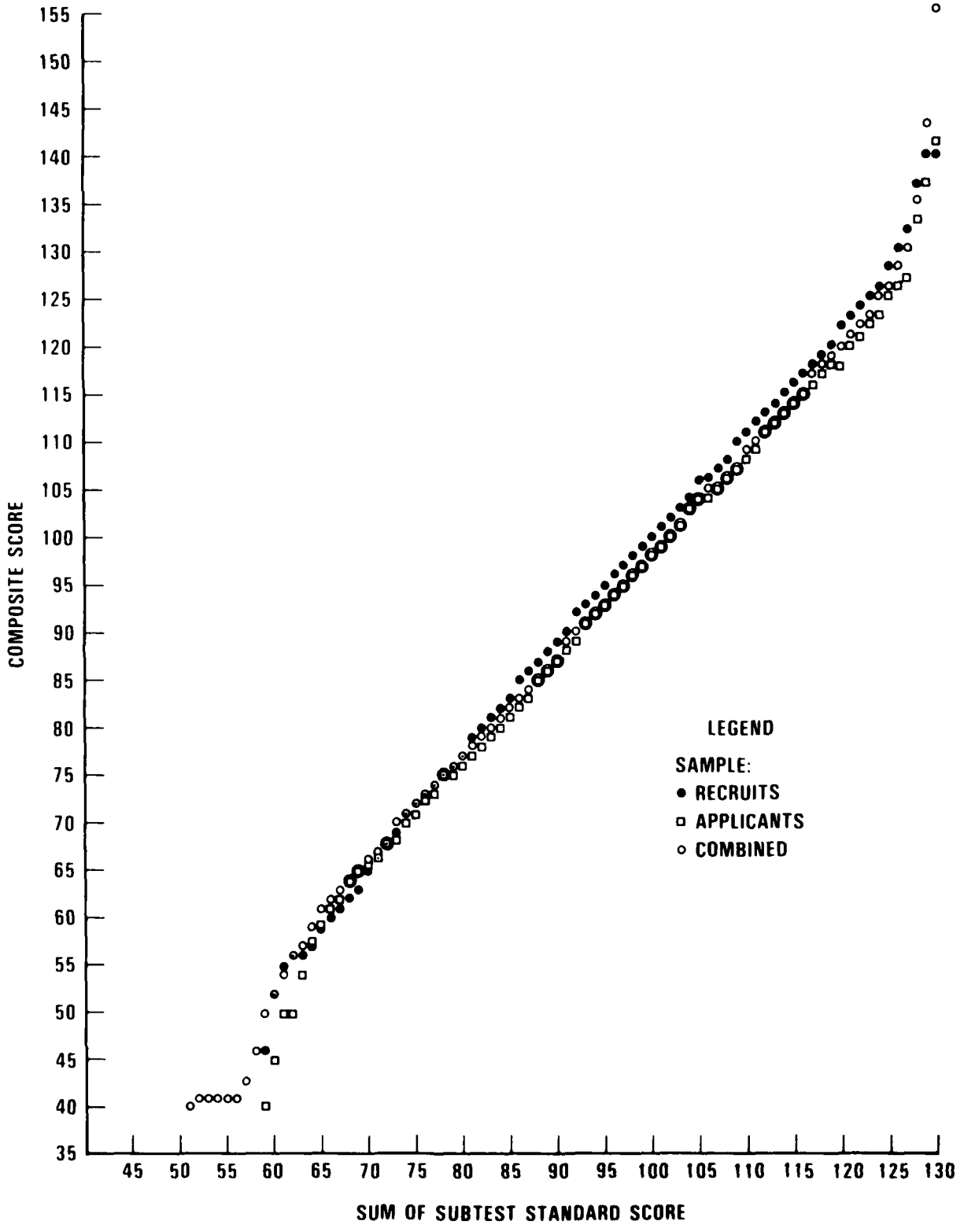

Figure 6. Calibration of General Technical (G or GT) aptitude composite

most representative sample of the reference population that is readily available, it suffers from a high degree of self-selection that restricts the distribution of scores in the upper end. Another source of nonrepresentativeness is the social and cultural mix of the applicants. About half the applicants in this sample were members of a cultural minority (over a third were black persons, and about 10 percent hispanics). Although these factors do not pose large problems as far as can be determined analytically in relating the ASVAB scores to the traditional score scale, they nonetheless do put more of a burden on claims that the score has remained invariant over the past decades.

When earlier forms of the AFQT, from 1950 until 1960, were calibrated, these sampling problems did not arise because there was a pool of registrants (persons registering for the draft) who were available to participate in the norming efforts. They were reasonably representative of the reference population, and a greater degree of research control was possible with the pool of registrants as compared to applicants for enlistment, who must be actively recruited.

A reasonable resolution to the sampling issues appears to have been worked out by pooling the samples of applicants and recruits, and by a careful editing of the data to delete cases with suspect scores. In the absence of an external criterion to evaluate the accuracy of the conversions, the results can be evaluated only by the standards of reasonableness and consistency from independent analyses. The conversions for the new ASVAB pass these tests, and the score scale for ASVAB 8/9/10 appears to maintain the same meaning as that traditionally used for the Department of Defense testing program.

One effect of a nonrepresentative sample was clear--high school students cannot be used for calibrating military tests. The calibration on high school students produced systematic differences from applicants and recruits. The precise nature of the differences in score distributions between students and the current military population has not been determined. Further analyses are required to evaluate the effects of education and experience on test score scales.

Because of the difficulties in obtaining representative samples in the current military testing environment, more research is required to develop improved procedures for data analysis that can lead to greater confidence in the results.

One promising technique is to have a continued program of calibrating individual subtests instead of trying to develop a whole new test battery at the same time. The burden on the accessioning system of administering short experimental subtests is relatively small, and enough cases could then be obtained to assure that the sample is representative. The new ASVAB, with subtest raw scores converted to standard scores, facilitates such a continual data collection procedure. Through this procedure score scales can be developed that elicit confidence in their historical comparability.

Equipercentile Equating Technique. The results for the recruit and applicant samples and for the combined sample are similar throughout most of the score range. Apparently with samples of this size, the equipercentile equating technique provides consistent results in spite of variation in the composition of the sample. The technique is robust and appears to be adequate for calibrating military tests.

Quality of the ASVAB. The concerns for accuracy in scaling ASVAB 8/9/10 naturally arose in the Defense Community because of the large error in scaling the version of ASVAB (forms 6 and 7) used with applicants for enlistment from January 1976 through September 1980. Personnel management supported the extra expense and operational burden to complete these efforts because of the incorrect operational decisions about qualification and the embarrassment associated with the inflation of scores on ASVAB 6 and 7.

In addition to the three independent efforts to scale ASVAB-8AX to AFQT-7A (applicants, recruits, and high school students), a large effort to verify the accuracy of the score scale is projected concurrent with implementation of the new forms. Each of the forms of the AFQT (there are six) will be equated to AFQT-7A in separate samples of about 2500 male applicants each. As each ASVAB form is used for the first time, AFQT-7A will be administered in counter-balanced order along with the new test. When this verification effort is completed, the scaling of ASVAB 8/9/10 to AFQT-7A will be accurately determined.

With all the concern for the quality of the ASVAB scoring system, ASVAB 8/9/10 will be more thoroughly evaluated than any other military test, and probably than any other single test battery. When all the research is completed, we will know about the utility of its scores for predicting success in job training courses, which is the usual criterion, and for predicting performance on the job, which has been the dream of testing psychologists, but seldom realized because until now no one was willing to bear the expense of developing and administering the necessary performance measures.

APPENDIX A

Intercorrelations[1] of ASVAB Subtests for Applicant Sample (N=2375)

	GS	AR	WK	PC	NO	CS	ASA	MK	MC	EI	VE
GS	100	69	82	73	47	46	70	63	71	75	82
AR	69	100	68	68	62	52	62	78	67	65	71
WK	82	68	100	80	50	49	68	61	68	75	98
PC	73	68	80	100	52	50	62	59	63	69	90
NO	47	62	50	52	100	62	40	57	42	43	53
CS	46	52	49	50	62	100	41	49	43	42	52
AS	70	62	68	62	40	41	100	50	74	73	69
MK	63	78	61	59	57	49	50	100	60	57	63
MC	71	67	68	63	42	43	74	60	100	72	69
EI	75	65	75	69	43	42	73	57	72	100	76
VE	82	71	98	90	53	52	69	63	69	76	100
	GS	AR	WK	PC	NO	CS	AS	MK	MC	EI	VE
Mean[2]	46.3	46.2	46.5	46.6	47.7	47.7	46.5	46.7	46.2	46.5	46.3
S.D.	9.6	9.3	10.2	10.3	10.3	10.0	9.8	9.0	9.5	9.7	10.1

[1] Decimals omitted
[2] Means and Standard deviations reported as standard scores with population mean of 50 and sigma of 10.

APPENDIX B CONVERSION TABLES FOR SUBTEST STANDARD SCORES

ASVAB 8AX
Conversion Table
General Science (GS)

Raw Score	Standard Score			Raw Score	Standard Score		
	Recruits	Applicant	Combined[a]		Recruits	Applicant	Combined
0	15	20	20	13	43	44	44
1	17	22	20	14	45	46	46
2	19	24	22	15	47	48	48
3	21	25	24	16	49	50	50
4	24	27	26	17	51	52	52
5	26	29	28	18	53	54	54
6	28	31	30	19	55	55	56
7	30	33	32	20	57	57	57
8	32	35	34	21	59	59	59
9	34	37	36	22	62	61	61
10	36	39	38	23	64	63	63
11	38	40	40	24	66	65	65
12	40	42	42	25	68	67	67

[a] Conversions based on the combined sample were implemented for operational use on 1 October 1980.

APPENDIX B (Continued)

ASVAB 8AX
Conversion Table
Arithmetic Reasoning (AR)

Raw Score	Standard Score			Raw Score	Standard Score		
	Recruits	Applicant	Combined		Recruits	Applicant	Combined
0	25	25	25	16	47	48	48
1	26	27	27	17	49	49	49
2	28	28	28	18	50	51	50
3	29	30	29	19	51	52	52
4	31	31	31	20	53	53	53
5	32	32	32	21	54	55	54
6	33	34	34	22	56	56	56
7	35	35	35	23	57	58	57
8	36	37	36	24	58	59	59
9	37	38	38	25	66	60	60
10	39	39	39	26	61	62	61
11	40	41	41	27	63	63	63
12	42	42	42	28	64	65	64
13	43	44	43	29	65	66	66
14	44	45	45	30	67	67	67
15	46	46	46				

APPENDIX B (Continued)

ASVAB 8AX
Conversion Table
Word Knowledge (WK)

Raw Score	Standard Score Recruits	Applicant	Combined	Raw Score	Standard Score Recruits	Applicant	Combined
0	13	18	20	19	40	42	41
1	14	19	20	20	41	43	43
2	16	21	20	21	43	44	44
3	17	22	20	22	44	46	45
4	19	23	22	23	46	47	47
5	20	24	23	24	47	48	48
6	22	25	24	25	48	49	49
7	23	27	26	26	50	51	50
8	24	28	27	27	51	52	52
9	26	29	28	28	53	53	53
10	27	30	30	29	54	54	54
11	29	32	31	30	56	56	56
12	30	33	32	31	57	57	57
13	31	34	33	32	58	58	58
14	33	36	35	33	60	59	60
15	34	37	36	34	61	61	61
16	36	38	37	35	63	62	62
17	37	39	39				
18	39	40	40				

APPENDIX B (Continued)

ASVAB 8AX
Conversion Table
Paragraph Comprehension (PC)

Raw Score	Standard Score			Raw Score	Standard Score		
	Recruits	Applicant	Combined		Recruits	Applicant	Combined
0	19	20	20	8	42	43	43
1	22	23	22	9	45	46	46
2	25	26	25	10	48	49	49
3	27	29	28	11	51	52	52
4	30	32	32	12	54	55	54
5	33	34	34	13	57	58	57
6	36	37	37	14	60	60	60
7	39	40	40	15	63	63	63

APPENDIX B (Continued)

ASVAB 8AX
Conversion Table
Numerical Operations (NO)

Raw Score	Standard Score Recruits	Applicant	Combined	Raw Score	Standard Score Recruits	Applicant	Combined
0	13	18	20	27	40	42	41
1	14	18	20	28	41	43	42
2	15	19	20	29	42	44	43
3	16	19	20	30	43	45	44
4	17	20	20	31	44	46	45
5	18	21	20	32	45	47	46
6	19	22	21	33	46	48	47
7	20	23	22	34	47	49	48
8	21	24	23	35	48	50	49
9	22	25	24	36	49	51	50
10	23	26	25	37	50	52	51
11	24	28	27	38	51	53	52
12	25	28	27	39	52	54	53
13	26	29	28	40	53	55	54
14	27	30	29	41	59	56	55
15	28	31	30	42	55	57	56
16	29	32	31	43	56	58	57
17	30	33	32	44	57	59	58
18	31	34	33	45	58	60	59
19	32	35	34	46	59	61	60
20	33	36	35	47	60	62	61
21	34	37	36	48	61	63	62
22	35	38	36	49	62	64	62
23	36	39	37	50	63	65	63
24	37	40	38				
25	30	41	39				
26	39	42	40				

APPENDIX B (Continued)

ASVAB 8AX
Conversion Table
Coding Speed (CS)

Raw Score	Standard Score Recruits	Applicant	Combined	Raw Score	Standard Score Recruits	Applicant	Combined
0	21	23	24	45	50	51	52
1	22	24	25	46	51	52	53
2	23	24	25	47	52	52	53
3	23	25	26	48	52	53	54
4	24	26	27	49	53	54	56
5	25	26	27	50	54	54	55
6	25	27	28	51	54	55	56
7	26	28	29	52	55	55	56
8	27	28	29	53	56	56	57
9	27	29	30	54	56	57	58
10	28	29	30	55	57	57	58
11	29	30	31	56	57	58	59
12	29	31	32	57	58	59	59
13	30	31	33	58	59	59	60
14	30	32	33	59	59	60	61
15	31	33	34	60	60	60	61
16	31	33	34	61	61	61	62
17	32	34	35	62	61	62	63
18	33	34	35	63	62	62	63
19	34	35	36	64	63	63	64
20	34	36	37	65	63	64	64
21	35	36	37	66	64	64	65
22	36	37	38	67	65	65	66
23	33	38	38	68	65	65	66
24	37	38	39	69	66	66	67
25	38	39	40	70	66	67	67
26	38	39	40	71	67	67	68
27	39	40	41	72	68	68	69
28	39	41	42	73	68	69	69
29	40	41	42	74	69	69	70
30	41	42	43	75	70	70	71
31	41	42	43	76	70	70	71
32	42	43	44	77	71	71	72
33	43	44	45	78	72	72	72
34	43	44	45	79	72	72	73
35	47	45	46	80	73	73	74
36	45	46	46	81	74	73	74
37	45	46	47	82	74	74	75
38	46	47	48	83	75	75	75
39	47	47	48	84	75	75	76
40	47	48	49				
41	48	49	50				
42	48	49	50				
43	49	50	51				
44	50	51	51				

APPENDIX B (Continued)

ASVAB 8AX
Conversion Table
Auto/Shop Information (AS)

Raw Score	Standard Score Recruits	Applicant	Combined	Raw Score	Standard Score Recruits	Applicant	Combined
0	17	22	21	13	42	44	44
1	19	24	22	14	44	46	46
2	21	25	24	15	46	48	47
3	23	27	26	16	48	50	49
4	25	29	28	17	50	51	51
5	27	31	30	18	52	53	53
6	29	32	31	19	54	55	55
7	30	34	33	20	56	57	56
8	33	36	35	21	58	58	58
9	35	38	37	22	59	60	60
10	37	39	39	23	61	62	62
11	38	41	40	24	63	64	64
12	40	43	42	25	65	65	65

APPENDIX B (Continued)

ASVAB 8AX
Conversion Table
Mathematics Knowledge (MK)

Raw Score	Standard Score			Raw Score	Standard Score		
	Recruits	Applicant	Combined		Recruits	Applicant	Combined
0	29	29	29	13	51	51	51
1	30	31	31	14	52	53	53
2	32	33	32	15	54	54	54
3	34	34	34	16	56	56	56
4	35	36	36	17	58	58	58
5	37	38	37	18	60	59	59
6	39	39	39	19	61	61	61
7	41	41	41	20	63	63	63
8	42	43	42	21	64	64	64
9	44	44	44	22	66	66	66
10	46	46	46	23	68	68	68
11	47	48	48	24	70	69	69
12	49	49	49	25	71	71	71

APPENDIX B (Continued)

ASVAB 8AX
Conversion Table
Mechanical Comprehension (MC)

Raw Score	Standard Score			Raw Score	Standard Score		
	Recruits	Applicant	Combined		Recruits	Applicant	Combined
0	20	23	22	13	44	46	45
1	22	24	24	14	47	48	47
2	24	26	26	15	48	49	49
3	26	28	28	16	50	51	51
4	28	30	29	17	52	53	53
5	29	32	31	18	54	55	54
6	31	33	33	19	56	57	56
7	33	35	35	20	58	58	58
8	35	37	37	21	59	60	60
9	37	39	38	22	61	62	62
10	39	40	40	23	63	64	63
11	41	42	42	24	65	65	65
12	43	44	44	25	67	67	67

APPENDIX B (Continued)

ASVAB 8AX
Conversion Table
Electronics Information (EI)

Raw Score	Standard Score Recruits	Applicant	Combined	Raw Score	Standard Score Recruits	Applicant	Combined
0	20	22	21	11	46	47	47
1	22	24	23	12	48	49	49
2	25	26	27	13	51	52	51
3	27	29	28	14	53	54	54
4	29	31	30	15	55	56	56
5	32	33	33	16	58	59	58
6	34	36	35	17	60	61	61
7	36	38	37	18	62	63	63
8	39	40	40	19	65	65	65
9	41	42	42	20	67	68	67
10	44	45	44				

APPENDIX B (Continued)

ASVAB 8AX
Conversion Table
Verbal (VE)

Raw Score	Standard Score			Raw Score	Standard Score		
	Recruits	Applicant	Combined		Recruits	Applicant	Combined
0	13	17	20	26	39	41	40
1	14	18	20	27	40	42	41
2	15	19	20	28	41	43	42
3	16	20	20	29	42	44	43
4	17	21	20	30	43	45	44
5	18	22	21	31	44	46	45
6	19	23	22	32	45	46	46
7	20	24	23	33	46	47	47
8	21	25	23	34	47	48	48
9	22	26	24	35	48	49	49
10	23	26	25	36	49	50	50
11	24	27	26	37	50	51	51
12	25	28	27	38	51	52	52
13	26	29	28	39	52	53	53
14	27	30	29	40	53	54	54
15	28	31	30	41	54	55	55
16	29	32	31	42	55	56	56
17	30	33	32	43	56	56	56
18	31	34	33	44	57	57	57
19	32	35	34	45	58	58	58
20	33	36	35	46	59	59	59
21	34	36	36	47	60	60	60
22	35	37	37	48	61	61	61
23	36	38	38	49	62	62	62
24	37	39	39	50	63	63	63
25	38	40	39				

APPENDIX C

CONVERSION TABLES FOR APTITUDE COMPOSITES

ASVAB 8AX CONVERSION TABLE

APTITUDE COMPOSITE: COMBAT - CO (ARMY)

Subtests: CS + AR + MC + AS

Sum of Subtest Standard Scores	Composite Score			Sum of Subtest Standard Scores	Composite Score		
	Recruits	Applicant	Combined[a]		Recruits	Applicant	Combined
91-106	41	40	40	164-165	76-77	75-76	76
107-122	41	40	41	166-167	78	76-77	77
123	41	40	43	168	79	77	78
124	50	40	45	169-170	80-81	78	79
125	52	50	48	171-172	81-82	79-80	80
126	55	40	50	173	41	40	40
127	55	40	52	174-175	83-84	81-82	82
128	55	40	53	176	85	82	83
129	56	45	54	177	85	83	84
130	56	45	55	178-179	86	84-85	85
131	56	50	56	180	87	85	86
132-133	56-57	50-54	57	181-182	88-89	86-87	87
134	57	54	58	183	90	87	88
135-136	58	54-57	59	184-185	90-91	88-89	89
137	59	57	60	186	92	90	90
138-139	59-60	59	61	187	93	90	91
140-142	60-61	59-61	62	188-189	93-94	91-92	92
143	62	62	63	190-191	95-96	92-93	93
144	62	62	64	192-193	96-97	93-94	94
145-146	63	64-65	65	194-195	98	95	95
147-148	64	65-66	66	196-197	98-99	96	96
149	65	66	67	198	99	97	97
150-151	65-66	66-68	68	199-200	100	98	98
152-153	67	68	69	201	101	99	99
154-155	68-69	68-70	70	202-203	101-102	99-100	100
156-157	70	70-71	71	204-205	103	100-101	101
158	71	71	72	206-207	104-105	102-103	102
159	72	71	73	208-209	105-106	103	103
160-161	73-75	73	74	210-211	107-108	104	104
162-163	74-75	75	75	212-213	108-109	105	105

[a] Conversions from the combined sample were implemented for operational use 1 Oct 80.

APPENDIX C (Continued)

ASVAB 8AX CONVERSION TABLE

APTITUDE COMPOSITE: COMBAT - CO (ARMY) (Continued)

Subtests: CS + AR + MC + AS

Sum of Subtest Standard Scores	Composite Score			Sum of Subtest Standard Scores	Composite Score		
	Recruits	Applicant	Combined		Recruits	Applicant	Combined
214	109	106	106	253	133	131	131
215	110	107	107	254	134	133	133
216	110	107	108	255	135	135	135
217-218	111-112	108-109	109	256	136	135	136
219	113	109	110	257	136	135	137
220-221	113-114	110-111	111	258	137	137	138
222	114	111	112	259	137	137	139
223-224	115-116	112	113	260	138	141	141
225-226	117	113-114	114	261	139	141	143
227	118	114	115	262	139	141	144
228-229	119-120	115-116	116	263	139	147	145
230-231	121	116-117	117	264	140	147	147
232	122	117	118	265	140	147	149
233	122	117	119	266	140	155	150
234	123	118	120	267	140	155	151
235-236	123-124	118-119	121	268-269	140	155	152
237-238	124-125	120-121	122	270	140	155	153
239-240	126	121-122	123	271-272	140	155	154
241-242	127	123	124	273-274	140	155	155
243	128	123	125				
244-245	128-129	124	126				
246-247	130	125	127				
248-249	131	126	128				
250	132	127	129				
251-252	132-133	127-128	130				

APPENDIX C

CONVERSION TABLES FOR APTITUDE COMPOSITES

ASVAB 8AX CONVERSION TABLE

APTITUDE COMPOSITE: COMBAT - CO (MARINES)

Subtests: NO + VE + AS

Sum of Subtest Standard Scores	Composite Score			Sum of Subtest Standard Scores	Composite Score		
	Recruits	Applicant	Combined		Recruits	Applicant	Combined
61-70	41	40	40	113-114	68	68-70	70
71-79	41	40	41	115-116	69-70	70	71
80	48	40	43	117	70	71	72
81	49	40	45	118-119	71-72	71-73	73
82	50	40	48	120-121	72-73	73	74
83	50	40	50	122-123	74-75	75	75
84	51	40	51	124-125	76-77	75-76	76
85	52	40	52	126-127	77-78	76-77	77
86	53	40	53	128-129	79-80	78	78
87	54	45	54	130	81	79	79
88	55	45	55	131	82	79	80
89-90	55-56	50	56	132	82	80	81
91-92	56-57	50-54	57	133-134	83-84	81-82	82
93-94	57-58	54-57	58	135	85	83	83
95-96	58-59	57	59	136	86	84	84
97-98	59-60	59	60	137	87	85	85
99	60	59	61	138-139	87-88	86	86
100-101	60-61	61	62	140	89	87	87
102	61	62	63	141	90	88	88
103-104	61-62	62-64	64	142	91	89	89
105-106	63-64	64-65	65	143	92	90	90
107-108	64-65	65	66	144	93	91	91
109	65	65	67	145-146	94-95	92	92
110	66	66	68	147	96	93	93
111-112	66-67	66-68	69	148	97	94	94

APPENDIX C (Continued)

ASVAB 8AX CONVERSION TABLE

APTITUDE COMPOSITE: COMBAT - CO (MARINES) (Continued)

Subtests: NO + VE + AS

Sum of Subtest Standard Scores	Composite Score			Sum of Subtest Standard Scores	Composite Score		
	Recruits	Applicant	Combined		Recruits	Applicant	Combined
149-150	98-99	95	95	176	125	120	120
151	99	96	96	177	126	121	121
152	100	97	97	178	127	121	122
153	101	98	98	179	128	122	123
154	102	99	99	180	129	123	124
155-156	103-104	99-100	100	181	130	124	125
157	105	101	101	182	131	125	126
158	106	103	102	183	132	126	127
159	107	103	103	184	133	126	130
160	108	104	104	185	135	127	131
161	109	105	105	186	137	128	133
162	110	105	106	187	138	130	135
163	112	107	107	188	140	133	137
164	113	107	108	189	140	135	141
165	114	109	109	190	140	137	147
166	115	110	110	191	140	141	155
167	116	111	111				
168	117	112	112				
169	118	113	113				
170	119	114	114				
171	120	115	115				
172	121	117	116				
173	122	117	117				
174	123	118	118				
175	124	119	119				

APPENDIX C

CONVERSION TABLES FOR APTITUDE COMPOSITES

ASVAB 8AX CONVERSION TABLE

APTITUDE COMPOSITE: FIELD ARTILLERY - FA (ARMY)

Subtests: CS + AR + MC + MK

Sum of Subtest Standard Scores	Composite Score			Sum of Subtest Standard Scores	Composite Score		
	Recruits	Applicant	Combined		Recruits	Applicant	Combined
99-113	41	40	40	158	71	71	72
114-127	41	40	41	159	72	71	73
128	48	40	44	160-161	73-74	73	74
129	50	40	47	162-163	75-76	75	75
130	51	40	50	164-165	77	76	76
131	52	45	53	166	78	76	77
132	54	45	53	167-168	79-80	77	78
133	55	45	54	169-170	81	78	79
134	55	50	55	171	82	79	80
135-136	56	50	56	172	83	80	81
137-138	57	54	57	173	84	81	82
139	58	54	58	174	85	82	83
140-141	58-59	57	59	175-176	86-87	83	84
142	59	57	60	177	87	84	85
143	59	59	61	178	88	85	86
144-145	61	62	63	179-180	89-90	86-87	87
146	61	62	63	181	91	88	88
147	61	62	64	182	91	88	89
148-149	62-63	64-65	65	183-184	92-93	89-90	90
150-151	64-65	65	66	185	94	90	91
152	65	66	67	186-187	95-96	92	92
153	66	66	68	188	96	93	93
154	67	68	69	189-190	97	93-94	94
155-156	68-69	68-70	70	191-192	97-98	94-95	95
157	70	70	71	193-194	98-99	95-96	96

APPENDIX C (Continued)

ASVAB 8AX CONVERSION TABLE

APTITUDE COMPOSITE: FIELD ARTILLERY - FA (ARMY) (Continued)

Subtests: CS + AR + MC + MK

Sum of Subtest Standard Scores	Composite Score			Sum of Subtest Standard Scores	Composite Score		
	Recruits	Applicant	Combined		Recruits	Applicant	Combined
195	99	97	97	242-243	125	121	122
196-197	100	97-98	98	244-246	126-127	121-123	123
198-199	101-102	98-99	99	247-248	127	123	124
200-201	102-103	99-100	100	249-250	128	124	125
202	103	100	101	251-252	129	125-126	126
203-204	104-105	101-102	102	253-254	130	126-127	127
205-206	105-106	103	103	255-256	131-132	127-128	128
207-208	107	104	104	257	132	128	129
209-210	108	105	105	258-259	133	130	130
211	109	106	106	260	134	131	131
212-213	109-110	107	107	261	135	133	133
214-215	111	107-108	108	262	135	133	134
216-217	112	109	109	263	136	135	135
218	113	109	110	264	137	135	136
219-220	113-114	110-111	111	265	137	137	137
221-224	114-115	111-112	112	266	137	137	138
223-224	115-116	112-113	113	267	138	141	139
225-226	116-117	113-114	114	268	138	147	141
227-228	117-118	114-115	115	269	138	147	142
229-230	118-119	116	116	270	139	147	143
231-232	120	116-117	117	271	139	147	145
233-234	121	117	118	272	139	155	147
235-236	122	117-118	119	273	139	155	149
237-238	123	118	120	274	140	155	150
239-241	124-125	118-120	121	275	140	155	151
				276	140	155	152
				277-278	140	155	153
				279	140	155	154
				280	140	155	155

APPENDIX C

CONVERSION TABLES FOR APTITUDE COMPOSITES

ASVAB 8AX CONVERSION TABLE

APTITUDE COMPOSITE: FIELD ARTILLERY - FA (MARINES)

Subtests: AR + VE + AS

Sum of Subtest Standard Scores	Composite Score			Sum of Subtest Standard Scores	Composite Score		
	Recruits	Applicant	Combined		Recruits	Applicant	Combined
66-75	41	40	40	114	71	71	72
76-86	41	40	41	115	72	71	73
87	45	40	44	116	73	73	74
88	49	40	47	117-118	74-75	73-75	75
89	52	40	50	119-120	76	75-76	76
90	54	40	52	121-122	77	76-77	78
91	55	45	53	123-124	78-79	77-78	78
92	55	54	54	125-126	79-80	78-79	79
93	55	50	55	127	80	79	80
94	56	50	56	128	81	80	81
95	56	54	57	129-130	82-83	81-82	82
96	57	54	58	131	84	83	83
97	57	57	59	132	85	83	84
98	58	57	60	133-134	85-86	84-85	85
99-100	58-59	59-61	61	135	87	86	86
101	60	61	62	136	88	87	87
102	60	62	63	137	89	88	88
103	61	64	64	138	90	88	89
104-105	63-64	64-65	65	139	91	89	90
106	65	65	66	140-141	92-93	90-91	91
107	66	66	67	142	94	92	92
108	67	66	68	143-144	95	92-93	93
109	67	68	69	145	96	94	94
110-111	68-69	68-70	70	146-147	97-98	95-96	95
112-113	70-71	70-71	71	148	99	96	96

APPENDIX C (Continued)

ASVAB 8AX CONVERSION TABLE

APTITUDE COMPOSITE: FIELD ARTILLERY - FA (MARINES) (Continued)

Subtests: AR + VE + AS

Sum of Subtest Standard Scores	Composite Score			Sum of Subtest Standard Scores	Composite Score		
	Recruits	Applicant	Combined		Recruits	Applicant	Combined
149	99	97	97	174	119	117	117
150	100	98	98	175	120	111	118
151-152	100-101	99	99	176	121	118	119
153-154	102-103	100	100	177	122	118	120
155	103	101	101	178-179	123	119-120	121
156	104	102	102	180	124	121	122
157	105	103	103	181	125	122	123
158-159	106-107	104-105	104	182	126	123	124
160-161	107-108	105-106	105	183	127	123	125
162	109	106	106	184	128	124	126
163	110	107	107	185	129	125	127
164	110	107	108	186	130	126	128
165	111	109	109	187	131	126	130
166	112	110	110	188	132	127	131
167	113	111	111	189	133	128	133
168	114	111	112	190	134	133	135
169	115	112	113	191	135	135	137
170	115	113	114	192	139	137	141
171	116	114	115	193	140	141	147
172-173	117-118	116	116	194	140	141	151
				195	140	147	155

APPENDIX C

CONVERSION TABLES FOR APTITUDE COMPOSITES

ASVAB 8AX CONVERSION TABLE

APTITUDE COMPOSITE: ELECTRONICS - EL (ARMY AND MARINES)

Subtests: AR + MK + EI + GS

Sum of Subtest Standard Scores	Composite Score			Sum of Subtest Standard Scores	Composite Score		
	Recruits	Applicant	Combined		Recruits	Applicant	Combined
95-109	41	40	40	152-153	67-68	68	70
110-124	41	40	41	154	69	70	71
125	41	40	43	155	70	70	72
126	41	40	45	156-157	71-72	71	73
127	41	40	48	158-159	73-74	73-75	74
128	41	40	50	160-161	75-76	75-76	75
129	51	40	51	162-163	77-78	76	76
130	52	40	52	164	79	77	77
131	53	45	53	165-166	80	77-78	78
132	54	45	54	167	81	78	79
133	55	50	55	168-169	81-82	79-80	80
134	56	50	56	170-171	83-84	81-82	81
135-136	57	54	57	172	84	82	82
137	58	54	58	173	85	83	83
138-139	58-59	57	59	174	86	84	84
140	59	59	60	175-176	87-88	85-86	85
141	60	59	61	177	89	86	86
142-143	61	61	62	178	90	87	87
144	62	62	63	179-180	90-91	87-88	88
145	63	62	64	181	92	89	89
146-147	63-64	64-65	65	182	92	90	90
148	64	65	66	183-184	93-94	90-91	91
149	65	66	67	185-186	94-95	92	92
150	66	66	68	187-188	96	93	93
151	67	68	69	189-190	97-98	94	94

APPENDIX C (Continued)

ASVAB 8AX CONVERSION TABLE

APTITUDE COMPOSITE: ELECTRONICS - EL (ARMY AND MARINES) (Continued)

Subtests: AR + MK + EI + GS

Sum of Subtest Standard Scores	Composite Score			Sum of Subtest Standard Scores	Composite Score		
	Recruits	Applicant	Combined		Recruits	Applicant	Combined
191-192	98-99	95	95	239-240	122-123	118	120
193	99	96	96	241-243	123-124	119-120	121
194	99	96	96	244-245	124-125	120-121	122
195-196	100	97-98	98	246-248	125-126	121-122	123
197-198	100-101	98-99	99	249-251	126-128	122-123	124
199-200	101-102	99-100	100	252-253	128	123-124	125
201-202	102-103	100	101	254-255	129	124-125	126
203-204	104	101-102	102	256-257	130-131	125-127	127
205-206	105	103	103	258	132	126	128
207-208	106	104	104	259	132	127	129
209-210	107-108	104-105	105	260	132	128	130
211-212	109	105-106	106	261	133	130	131
213-214	110	107	107	262	133	131	132
215	111	108	108	263	134	131	133
216-217	111-112	109	109	264	135	133	134
218-219	112-113	109-110	110	265	136	134	135
220-221	113-114	111	111	266	136	135	137
222-223	114-115	112	112	267	137	137	141
224-225	115-116	113	113	268	138	141	145
226-227	116-117	113-114	114	269	139	147	147
228-229	117-118	114-115	115	270	140	147	150
230-231	118-119	116	116	271	140	147	153
232-233	119-120	116-117	117	272	140	147	155
234-236	120-121	117	118				
237-238	122	118	119				

APPENDIX C

CONVERSION TABLES FOR APTITUDE COMPOSITES

ASVAB 8AX CONVERSION TABLE

APTITUDE COMPOSITE: SURVEILLANCE COMMUNICATIONS SC (ARMY)

Subtests: NO + CS + VE + AS

Sum of Subtest Standard Scores	Composite Score			Sum of Subtest Standard Scores	Composite Score		
	Recruits	Applicant	Combined		Recruits	Applicant	Combined
84-97	41	40	40	150-151	65-66	66	68
98-109	41	40	41	152-153	66-67	68	69
110	41	40	43	154-155	68	68-70	70
111	41	40	45	156-157	69-70	70	71
112	41	40	47	158-159	70-71	71	72
113	41	40	48	160-161	72-73	71-73	73
114	41	40	49	162-163	73	73	74
115	41	40	50	164-166	74-75	73-75	75
116	45	40	51	167-169	76-77	75-76	76
117	50	40	52	170-171	78-79	76-77	77
118	54	45	53	172-173	79-80	77	78
119-120	55-56	45	54	174-175	81	78	79
121-122	56	50	55	176-177	82	79-80	80
123-124	56-57	50-54	56	178	83	81	81
125-126	57	54	57	179-180	84	82	82
127-128	57-58	54-57	58	181	85	83	83
129-131	58-59	57	59	182-183	86	83-84	84
132-133	59-60	57-59	60	184-185	87-88	84-85	85
134-135	60	59	61	186	89	86	86
136-137	61	61	62	187	89	86	87
138-139	61-62	61-62	63	188-189	90-91	87-88	88
140-141	62	62-64	64	190	92	88	89
142-144	63	64-65	65	191	93	89	90
145-147	64	65	66	192	94	90	91
148-149	64-65	66	67	193-194	94-95	91-92	92

APPENDIX C (Continued)

ASVAB 8AX CONVERSION TABLE

APTITUDE COMPOSITE: SURVEILLANCE COMMUNICATIONS SC (ARMY) (Continued)

Subtests: NO + CS + VE + AS

Sum of Subtest Standard Scores	Composite Score			Sum of Subtest Standard Scores	Composite Score		
	Recruits	Applicant	Combined		Recruits	Applicant	Combined
195-196	96-97	92-93	93	229-230	122-123	117	118
197-198	97-98	93-94	94	231	123	118	119
199	98	95	95	232	124	118	120
200-201	99-100	96	96	233-234	125	119-120	121
202	100	97	97	235-236	126-127	121	122
203	101	98	98	237-238	127-128	121-122	123
204-205	102	98-99	99	239-240	128-129	123	124
206-207	103-104	100	100	241	130	123	125
208	105	101	101	242-243	130-131	124	126
209	106	102	102	244-245	131-132	125	127
210-211	107	103	103	246	132	126	128
212-213	108-109	104	104	247	133	126-127	129
214	110	105	105	248	134	127	130
215	111	106	106	249	135	127	131
216-217	112	107	107	250	136	128	133
218	113	108	108	251	137	130	134
219	114	109	109	252	138	131	135
220	115	109	110	253	138	135	136
221	116	110	111	254	139	135	137
222	117	111	112	255	139	137	138
223-224	118	112-113	113	256	139	137	141
225	119	113	114	257	140	137	144
226	120	114	115	258	140	141	147
227	121	116	116	259	140	141	149
228	121	116	117	260	140	141	150
				261	140	141	151
				262	140	147	153
				263	140	147	153
				264	140	155	154
				265-266	140	155	155

APPENDIX C

CONVERSION TABLES FOR APTITUDE COMPOSITES

ASVAB 8AX CONVERSION TABLE

APTITUDE COMPOSITE: OPERATORS/FOOD - OF (ARMY)

Subtests: NO + VE + MC + AS

Sum of Subtest Standard Scores	Composite Score			Sum of Subtest Standard Scores	Composite Score		
	Recruits	Applicant	Combined		Recruits	Applicant	Combined
83-98	41-48	40	40	152-153	68	68-70	70
99-113	41-48	40	41	154-155	69	70	71
114	50	40	42	156-157	70	71	72
115	50	40	45	158-159	71-72	71-73	73
116	51	40	47	160-161	73	73	74
117	52	40	49	162-163	74-75	75	75
118	53	40	50	164-166	76-77	75-76	76
119	54	40	52	167-168	77-78	76-77	77
120	54	40	53	169-170	78-79	78	78
121-122	54-55	45	54	171-172	80-81	79	79
123	55	50	55	173	81	80	80
124-125	56	50	56	174-175	82	81	81
126-127	56-57	50-54	57	176-177	83	82	82
128-129	57-58	54-57	58	178	84	83	83
130-131	58-59	57	59	179	84	83	84
132-133	59	59	60	180-181	85-86	84-85	85
134-135	59-60	59-61	61	182-183	87-88	86	86
136-137	60	61-62	62	184	89	87	87
138-139	61	62	63	185	89	87	88
140-141	62	64	64	186-187	90	88-89	89
142-143	63-64	64-65	65	188-189	91-92	90	90
144-145	64-65	65	66	190-191	93-94	91-91	91
146-147	65-66	65-66	67	192-193	94-95	92-93	92
148-149	66-67	66	68	194-195	95-96	93-94	93
150-151	67	68	69	196	97	94	94

APPENDIX C (Continued)

ASVAB 8AX CONVERSION TABLE

APTITUDE COMPOSITE: OPERATORS/FOOD - OF (ARMY) (Continued)

Subtests: NO + VE + MC + AS

Sum of Subtest Standard Scores	Composite Score			Sum of Subtest Standard Scores	Composite Score		
	Recruits	Applicant	Combined		Recruits	Applicant	Combined
197-198	97-98	95	95	232	123	118	120
199-200	98-99	96	96	233-234	124	118-119	121
201	99	97	97	235	125	120	122
202-203	100	98	98	236-237	125-126	121	123
204-205	101-102	99	99	238-239	126-127	122-123	124
206-207	103-104	100	100	240-241	128	123-124	125
208	104	101	101	242	129	125	126
209	105	102	102	243-244	129-130	125	127
210-211	105-106	103	103	245	131	126	128
212-213	107-108	104	104	246	132	126	129
214	109	105	105	247	133	127	130
215	110	105	106	248	134	127	131
216-217	110-111	106-107	107	249	135	128	133
218	112	107	108	250	136	130	135
219	113	108	109	251	137	131	137
220	113	109	110	252	138	133	141
221	114	109	111	253	140	137	144
222	115	111	112	254	140	141	147
223-224	116-117	112	113	255	140	141	150
225	117	113	114	256	140	147	152
226	118	114	115	257	140	147	153
227-228	119-120	116	116	258	140	155	155
229	121	117	117				
230	122	117	118				
231	123	117	119				

APPENDIX C

CONVERSION TABLES FOR APTITUDE COMPOSITES

ASVAB 8AX CONVERSION TABLE

APTITUDE COMPOSITE: MECHANICAL MAINTENANCE - MM (ARMY)

Subtests: NO + EI + MC + AS

Sum of Subtest Standard Scores	Composite Score			Sum of Subtest Standard Scores	Composite Score		
	Recruits	Applicant	Combined		Recruits	Applicant	Combined
84-100	41	40	40	153-154	67-68	68-70	70
101-116	41-45	40	41	155-156	69-70	70	71
117	50	40	43	157	70	71	72
118	52	40	45	158-159	71-72	71-73	73
119	53	40	48	160-161	73	73	74
120	54	40	50	162-163	74-75	75	75
121	54	40	51	164-165	76	75-76	76
122	55	40	52	166-167	77	76-77	77
123	55	40	53	168	78	77	78
124-125	56	45	54	169-170	79	78	79
126	56	45	55	171-172	80-81	79-80	80
127-128	56-57	50	56	173-174	82	80-81	81
129-130	57	50-54	57	175	83	82	82
131-132	57-58	54-57	58	176	84	82	83
133-134	58	57	59	177-178	84-85	83-84	84
135	59	57	60	179-180	86-87	85-86	85
136-137	59	59	61	181	88	86	86
138-139	60	61	62	182-183	88-89	87	87
140-141	61	61-62	63	184	90	88	88
142-143	62	62-64	64	185	91	88	89
144-145	63	64-65	65	186-187	91-92	89-90	90
146-147	64	65	66	188-189	92-93	91	91
148	65	66	67	190-191	94	92	92
149-150	65-66	66	68	192-193	95-96	93	93
151-152	66-67	68	69	194-195	96-97	94-95	94

APPENDIX C (Continued)

ASVAB 8AX CONVERSION TABLE

APTITUDE COMPOSITE: MECHANICAL MAINTENANCE - MM (ARMY) (Continued)

Subtests: NO + EI + MC + AS

Sum of Subtest Standard Scores	Composite Score			Sum of Subtest Standard Scores	Composite Score		
	Recruits	Applicant	Combined		Recruits	Applicant	Combined
196-197	97-98	95-96	95	234	124	118	120
198-199	98-99	96-97	96	235-236	124-125	119-120	121
200	100	97	97	237	125	121	122
201-202	100-101	98	98	238-239	126-127	121-122	123
203-204	101-102	99	99	240-241	127-128	123	124
205-206	103-104	100	100	242	128	123	125
207	105	101	101	243-244	129	124-125	126
208	105	102	102	245-246	130	126	127
209-210	106-107	103	103	247	131	127	128
211-212	108	104	104	248	131	127	129
213-214	109-110	105	105	249	132	127	130
215	111	106	106	250	133	128	131
216-217	111-112	107	107	251	134	130	133
218	112	107	108	252	135	131	135
219	113	108	109	253	136	133	137
220	114	109	110	254	137	135	138
221	114	109	111	255	138	137	141
222-223	115-116	111	112	256	140	137	143
224	117	112	113	257	140	141	145
225-226	118-119	112-113	114	258	140	141	148
227	119	114	115	259	140	147	150
228-229	120	114-116	116	260	140	147	151
230	121	116	117	261	140	147	153
231-232	121-122	117	118	262	140	147	155
233	123	118	119				

APPENDIX C

CONVERSION TABLES FOR APTITUDE COMPOSITES

ASVAB 8AX CONVERSION TABLE

APTITUDE COMPOSITE: GENERAL MAINTENANCE - GM (ARMY AND MARINES)

Subtests: MK + EI + GS + AS

Sum of Subtest Standard Scores	Composite Score			Sum of Subtest Standard Scores	Composite Score		
	Recruits	Applicant	Combined		Recruits	Applicant	Combine
91-107	41-50	40	40	155	71	71	72
108-122	41-50	40	41	156	72	71	73
123	52	40	44	157-158	73-75	73	74
124	53	40	47	159-160	75	73-75	75
125	54	40	50	161-162	76	75-76	76
126	54	40	51	163-164	77-78	76-77	78
127	55	40	53	165-166	78-79	77-78	79
128-129	56	45	54	167-168	80	78-79	80
130	57	50	55	169-170	81	79-80	81
131	57	50	56	171	82	81	82
132-133	57-58	50-54	57	172-173	83	81-82	82
134	58	54	58	174	84	83	83
135-136	59	57	59	175-176	85-86	84-85	84
137	59	57	60	177	86	85	85
138-139	60	59	61	178-179	87-88	86	86
140-141	61-62	61	62	180	89	87	87
142	63	62	63	181-182	89-90	88-89	88
143	64	62	64	183	91	89	89
144-145	64-65	64	65	184-185	91-92	90	90
146	65	65	66	186-187	93-94	91-92	91
147	66	65	67	188-189	94-95	92-93	92
148-149	66-67	66	68	190-191	96-97	93-94	93
150	67	66	69	192-193	97-98	94-95	94
151-152	67-68	68	70	194	98	95	95
153-154	69-70	70	71	195-196	99	96	96

APPENDIX C (Continued)

ASVAB 8AX CONVERSION TABLE

APTITUDE COMPOSITE: GENERAL MAINTENANCE - GM (ARMY AND MARINES) (Continued)

Subtests: MK + EI + GS + AS

Sum of Subtest Standard Scores	Composite Score			Sum of Subtest Standard Scores	Composite Score		
	Recruits	Applicant	Combined		Recruits	Applicant	Combined
197	100	97	97	240-242	124-125	120-121	122
198-199	100-101	97-98	97	243-345	125-126	121-122	123
200-201	101-102	99	98	246-247	126-127	123	124
202-203	102-103	100	100	248-249	127-128	123-124	125
204-205	103-104	101	101	250-251	128-129	125	126
206-207	105	102-103	102	252-253	129-130	126	127
208-209	106	103	103	254	130	127	128
210-211	107-108	104	104	255	131	127	129
212-213	108-109	105	105	256	131	127	130
214	109	106	106	257	132	128	131
215-216	110	107	107	258	132	130	132
217	111	108	108	259	133	130	133
218-219	112	109	109	260	134	131	135
220	113	110	110	261	134	133	137
221	114	111	111	262	136	135	138
222	114	111	112	263	138	137	141
223-224	115-116	112	113	264	140	137	143
225-226	116-117	113-114	114	265	140	141	145
227	118	114	115	266	140	147	147
228-229	118-119	115-116	116	267	140	147	149
230-231	119-120	116	117	268	140	155	151
232-233	120-121	117	118	269	140	155	153
234-235	121-122	117-118	119	270	140	155	155
236-237	122-123	118	120				
238-239	123-124	119	121				

APPENDIX C

CONVERSION TABLES FOR APTITUDE COMPOSITES

ASVAB 8AX CONVERSION TABLE

APTITUDE COMPOSITE: CLERICAL - CL (ARMY AND MARINES)

Subtests: NO + CS + VE

Sum of Subtest Standard Scores	Composite Score			Sum of Subtest Standard Scores	Composite Score		
	Recruits	Applicant	Combined		Recruits	Applicant	Combined
63-71	40-50	40	40	113	67	66	69
72-78	52-55	40	40	114-115	68	68	70
79	56	40	43	116-117	70	68-70	71
80	56	40	45	118	71	70	72
81	56	40	47	119-120	72-73	71	73
82	57	40	48	121-122	74-75	73	74
83	57	40	50	123-124	75-76	75	75
84	57	40	51	125-126	77	75-76	76
85	58	40	52	127	78	76	77
86	58	45	53	128-129	79-80	77	78
87	59	45	54	130	81	78	79
88	59	45	55	131-132	82-83	78-79	80
89-90	60	50	56	133	84	80	81
91-92	56-57	54	57	134	85	81	82
93-94	57	54-57	58	135	86	82	83
95-96	58	57	59	136	87	83	84
97	59	59	60	137-138	88-89	84-85	85
98-99	59-60	59	61	139	90	85	86
100-101	60-61	61	62	140	91	86	87
102-103	61-62	61-62	63	141	92	87	88
104-105	62-63	62-64	64	142	93	88	89
106-107	63-64	64	65	143	94	89	90
108-109	64-65	65	66	144	95	90	91
110-111	65-66	65-66	67	145-146	96	91-92	92
112	67	66	68	147	97	92	93

APPENDIX C (Continued)

ASVAB 8AX CONVERSION TABLE

APTITUDE COMPOSITE: CLERICAL - CL (ARMY AND MARINES) (Continued)

Subtests: NO + CS + VE

Sum of Subtest Standard Scores	Composite Score			Sum of Subtest Standard Scores	Composite Score		
	Recruits	Applicant	Combined		Recruits	Applicant	Combined
148	97	93	94	176	124	118	119
149-150	98-99	93-95	95	177	125	118	120
151	100	96	96	178-179	125-126	119-120	121
152	101	97	97	180	127	121	122
153	102	98	98	181-182	127-128	121-122	123
154	103	99	99	183	129	123	124
155-156	104-105	99-100	100	184	130	123	125
157	106	101	101	185	131	124	126
158	107	103	102	186-187	131-132	124-125	127
159	108	103	103	188	132	126	128
160	109	104	104	189	132	126	129
161	110	105	105	190	133	127	130
162	111	105	106	191	134	130	131
163	112	107	107	192	134	131	133
164	113	107	108	193	135	133	135
165	114	109	109	194	135	133	137
166	115	110	110	195	136	135	138
167	116	111	111	196	137	135	141
168	117	111	112	197	138	137	144
169-170	118-119	112-113	113	198	139	137	147
171	120	114	114	199	140	141	149
172	120	115	115	200	140	141	152
173	121	116	116	201	140	147	155
174	122	117	117				
175	123	117	118				

APPENDIX C

CONVERSION TABLES FOR APTITUDE COMPOSITES

ASVAB 8AX CONVERSION TABLE

APTITUDE COMPOSITE: SKILLED TECHNICAL - ST (ARMY)

Subtests: VE + MK + MC + GS

Sum of Subtest Standard Scores	Composite Score			Sum of Subtest Standard Scores	Composite Score		
	Recruits	Applicant	Combined		Recruits	Applicant	Combined
91-105	41	40	40	151-152	68-69	68-70	70
106-109	41	40	41	153-154	69-70	70-71	71
120	41	40	43	155	71	71	72
121	41	40	47	156-157	72	73	73
122	41	40	47	158-159	73-74	73-75	74
123	41	40	49	160-161	75	75	75
124	44	40	50	162-163	76-77	76	76
125	45	45	51	164-165	78	76-77	77
126	51	45	52	166	79	77	78
127	52	45	53	167-168	79-80	78-78	79
128	53	50	55	169-170	80-81	79-80	80
129-130	55	50	56	170-171	82-83	81	81
131-132	56	54	57	173	84	82	82
133	57	54	58	174	84	83	83
134	58	57	59	175-176	85-86	84	84
135	58	57	60	177-178	87	85-86	85
136-137	59	59	61	179	88	87	86
138-139	60	61-62	62	180	89	87	87
140	61	64	63	181-182	90-91	88-89	88
141-142	61-62	64-65	64	183	92	89	89
143-144	63-64	65	65	184	92	90	90
145-146	65	65-66	66	185-186	93-94	90-91	91
147	66	66	67	187-188	94-95	91-92	92
148	66	66	68	189-190	95-96	92-93	93
149-150	67-68	68	69	191-192	97	93-94	94

APPENDIX C (Continued)

ASVAB 8AX CONVERSION TABLE

APTITUDE COMPOSITE: SKILLED TECHNICAL - ST (ARMY) (Continued)

Subtests: VE + MK + MC + GS

Sum of Subtest Standard Scores	Composite Score			Sum of Subtest Standard Scores	Composite Score		
	Recruits	Applicant	Combined		Recruits	Applicant	Combined
193-194	98	94-95	95	237-238	122-123	118	120
195-196	99	95-96	96	239-240	123	119-120	121
197	100	96	97	241-242	124	120-121	122
198-199	100	97-98	98	243-245	124-125	121-122	123
200-201	101	98-99	99	246-247	126	123	124
202-203	102	99-100	100	248-249	127	123	125
204-205	103-104	100-101	101	250-251	128	124	126
206	104	102	102	252-253	129-130	125-126	127
207-208	105	103	103	254	130	126	128
209-210	106-107	104	104	255	131	127	129
211-212	108	105	105	256	131	128	130
213	109	106	106	257	132	130	131
214-215	110	107	107	258	132	131	132
216	111	108	108	259	133	133	133
217-218	111-112	109	109	260	134	135	135
219	112	110	110	261	135	137	136
220	113	111	111	262	136	137	138
221-222	113-114	111-112	112	263	138	137	141
223-224	114-115	112	113	264	139	141	145
225-226	115-116	113	114	265	140	141	147
227-228	116-117	114	115	266	140	147	150
229-230	118	114-115	116	267	140	147	153
231-232	119	116	117	268	140	155	155
233-234	120	117	118				
235-236	121-122	117-118	119				

APPENDIX C

CONVERSION TABLES FOR APTITUDE COMPOSITES

ASVAB 8AX CONVERSION TABLE

APTITUDE COMPOSITE: GENERAL TECHNICAL - GT (ARMY AND MARINES)

Subtests: VE + AR

Sum of Subtest Standard Scores	Composite Score			Sum of Subtest Standard Scores	Composite Score		
	Recruits	Applicant	Combined		Recruits	Applicant	Combined
45-51	46	40	40	75	72	71	72
52-56	46	40	41	76	73	73	73
57	46	40	43	77	74	73	74
58	46	40	43	78	75	75	75
59	46	40	50	79	76	75	76
60	52	45	52	80	77	76	77
61	55	50	54	81	79	77	78
62	56	50	56	82	80	78	79
63	56	54	57	83	81	79	80
64	57	57	59	84	82	80	81
65	59	59	61	85	83	81	82
66	60	61	62	86	85	82	83
67	61	61	62	87	86	83	84
68	62	62	63	88	87	85	85
69	63	65	65	89	88	86	86
70	65	65	66	90	89	87	87
71	66	66	67	91	90	88	89
72	68	68	68	92	92	89	90
73	69	68	70	93	93	91	91
74	71	70	71	94	94	92	92

APPENDIX C (Continued)

ASVAB 8AX CONVERSION TABLE

APTITUDE COMPOSITE: GENERAL TECHNICAL - GT (ARMY AND MARINES) (Continued)

Subtests: VE + AR

Sum of Subtest Standard Scores	Composite Score			Sum of Subtest Standard Scores	Composite Score		
	Recruits	Applicant	Combined		Recruits	Applicant	Combined
95	95	93	93	116	117	115	115
96	96	94	94	117	118	116	117
97	97	95	95	118	119	117	118
98	98	96	96	119	120	118	119
99	99	97	97	120	122	118	120
100	100	98	98	121	123	120	121
101	101	99	99	122	124	121	122
102	102	100	100	123	125	122	123
103	103	101	102	124	126	123	125
104	104	103	103	125	128	125	126
105	106	104	104	126	130	126	128
106-107	106-107	104-105	105	127	132	127	130
108	108	106	106	128	137	133	135
109	110	107	107	129	140	137	143
110	111	108	109	130	140	141	155
111	112	109	110				
112	113	111	111				
113	114	112	112				
114	115	113	113				
115	116	114	114				

APPENDIX C

CONVERSION TABLES FOR APTITUDE COMPOSITES

ASVAB 8AX CONVERSION TABLE

AIR FORCE APTITUDE COMPOSITE: MECHANICAL (M)

Subtests: MC + GS +2AS

Aptitude Index	sum of subtest standard scores		
	Recruits	Applicants	Combined
1	84-121	87-129	84-123
5	122-143	130-140	124-138
10	144-154	141-143	139-152
15	155-64	154-166	153-163
20	165-173	167-173	164-172
25	174-182	174-182	173-182
30	183-188	183-189	183-189
35	189-192	190-195	190-195
40	193-196	196-200	196-200
45	197-201	201-206	201-206
50	202-206	207-212	207-212
55	207-210	213-218	213-217
60	211-216	219-223	218-222
65	217-222	224-227	223-225
70	223-226	228-230	226-230
75	227231	231-237	231-235
80	232-236	238-243	236-241
85	237-240	244-251	242-248
90	241-251	252-257	249-255
95	252-264	258-264	256-264

APPENDIX C

CONVERSION TABLES FOR APTITUDE COMPOSITES

ASVAB 8AX CONVERSION TABLE

AIR FORCE APTITUDE COMPOSITE ADMINISTRATIVE (A)

Subtests: NO + CS +VE

Aptitude Index	sum of subtest standard scores		
	Recruits	Applicants	Combined
1	63-92	60-93	64-90
5	93-111	94-107	91-105
10	112-120	108-120	106-118
15	121-127	121-131	119-129
20	128-132	132-136	130-135
25	133-136	137-142	136-141
30	137-140	143-147	142-146
35	141-143	148-150	147-149
40	144-156	151-152	150-152
45	147-149	153-155	153-155
50	150-153	156-159	156-159
55	154-156	160-162	160-162
60	157-159	163-165	163-165
65	160-162	166-169	166-168
70	163-166	170-172	169-171
75	167-169	173-176	172-174
80	170-173	177-181	175-179
85	174-177	182-187	180-184
90	178-187	188-192	185-191
95	188-201	193-204	192-201

APPENDIX C

CONVERSION TABLES FOR APTITUDE COMPOSITES

ASVAB 8AX CONVERSION TABLE

AIR FORCE APTITUDE COMPOSITE GENERAL (G)

Subtests: VE + AR

Aptitude Index	sum of subtest standard scores		
	Recruits	Applicants	Combined
1	45-63	45-63	45-62
5	64-70	64-68	63-68
10	71-75	69-75	69-75
15	76-80	76-82	76-81
20	81-84	83-87	82-86
25	85-88	88-91	87-90
30	89-91	92-94	91-94
35	92-94	95-97	95-96
40	95-96	98-99	97-99
45	97-99	100-102	100-101
50	100-102	103-104	102-104
55	103-105	105-108	105-108
60	106-108	109-111	109-110
65	109-111	112-113	111-113
70	112-113	114-116	114-115
75	114-117	117-119	116-117
80	118-119	120-122	118-121
85	120-122	123-125	122-124
90	123-126	127-127	125-127
95	127-130	128-130	128-130

APPENDIX C

CONVERSION TABLES FOR APTITUDE COMPOSITES

ASVAB 8AX CONVERSION TABLE

AIR FORCE APTITUDE COMPOSITE ELECTRONICS (E)

Subtests: AR + MK + EI + GS

Aptitude Index	sum of subtest standard scores		
	Recruits	Applicants	Combined
1	95-135	104-137	95-134
5	136-150	138-146	135-145
10	151-158	147-157	146-155
15	159-164	158-167	156-166
20	165-171	168-173	167-173
25	172-176	174-180	174-180
30	177-181	181-186	181-186
35	182-186	187-191	187-190
40	187-190	192-195	191-194
45	191-196	196-200	195-200
50	197-202	201-206	201-206
55	203-207	207-212	207-212
60	208-212	213-218	213-217
65	213-219	219-223	218-223
70	220-224	224-229	224-229
75	225-231	230-238	230-234
80	232-239	239-247	235-243
85	240-248	248-256	244-253
90	249-262	257-263	254-262
95	263-282	264-282	263-282

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